





**Library**  
of  
**Phillips Academy**

Accession No.      Shelf No.

---

BEQUEST OF  
R. SINGLETON PEABODY, Esq.

**ROBERT B. PEABODY FOUNDATION**  
**PHILLIPS ACADEMY**  
**ANDOVER, MASSACHUSETTS**



A faint, light gray watermark-style illustration of a classical building with four columns and a triangular pediment occupies the center of the page.

Digitized by the Internet Archive  
in 2013

<http://archive.org/details/maninnortheaster03fred>



570.6  
PSSS  
V. 3 -

PAPERS OF THE  
ROBERT S. PEABODY FOUNDATION  
FOR ARCHAEOLOGY

---

VOLUME THREE



PAPERS OF THE  
ROBERT S. PEABODY FOUNDATION  
FOR ARCHAEOLOGY

---

VOLUME THREE

# MAN IN NORTHEASTERN NORTH AMERICA

EDITED BY  
FREDERICK JOHNSON

PHILLIPS ACADEMY · ANDOVER, MASSACHUSETTS  
PUBLISHED BY THE FOUNDATION

1946

COPYRIGHT, 1946  
BY THE TRUSTEES OF PHILLIPS ACADEMY

PRINTED BY  
GEORGE BANTA PUBLISHING COMPANY  
MENASHA, WISCONSIN

## DEDICATION

FROM the beginning of his long and still active career, Dr. Frank Gouldsmith Speck has devoted the major part of his time and energy to many facets of the Anthropology of the northeast. His long bibliography, which is mute and incomplete testimony of his industry, is some indication of his catholic interests and his devotion. While the fields of Linguistics and Ethnology would probably claim him as one of their own, archaeologists, students of religion and primitive sociology find in his writings facts and ideas which are essential to the understanding of their own problems. Not only has Speck approached the problems from many angles but he has spread his work over a wide geographic area. Southeastern tribes, such as the Yuchi have seen him at work as well as have such peoples as the Delaware, the Wabanaki tribes, the Micmac, Montagnais-Naskapi, Algonquin and, of late, the Iroquois. More than that, he has been indefatigable in his quest for remnants of eastern tribes whose extinction has been acceded by those with less perseverance. He has been successful, occasionally extraordinarily so, in recording for the rest of us whatever remnant of aboriginal life may be found in these highly acculturated groups.

In dedicating this volume to Dr. Speck, we humbly and affectionately express our gratitude to him for the stimulation and example he has set for us.



## P R E F A C E

THE symposium which is the source of this volume was, in large measure, the result of the reorganization of the Peabody Foundation. During the course of events which saw the modernization of the Foundation's building, there was developed a very flexible research program. In this, the major part of the resources of the institution were committed, for an indefinite number of years, to the analysis of Anthropological problems in northern and northeastern North America. It seemed fitting that, as a part of this program, a group of people be gathered together in order to summarize what had been done in the region and to outline problems for the future. There was general approval of the proposal that such discussions be held at the meetings of the American Anthropological Association and other Societies at Andover in December 1941.

Perhaps most symposia are held for the purpose of directing the attention of a group of workers to problems which have not received concerted group attention. Ordinarily, however, such symposia are based upon either similar, previous discussions or the closely integrated work of a number of people. I think it may be said that one of the features of Anthropological investigation in the northeast is that it has been carried on by a number of individuals who, though they have cooperated splendidly, actually work pretty much alone. That the work of these individuals has been amply rewarded there can be no doubt. However, it was hoped that through the medium of this symposium the community of interest and the coincidence of ultimate aims could be demonstrated. If this occurred it seemed certain that the significance of present knowledge could be measured in factors of wider scope than the significant individual contributions.

It was not certain whether the papers presented would contain a central core which would serve as the common denominator for a single volume. Subsequent to the meeting, Cooper, Hallowell, and Johnson discussed this problem and decided that if certain gaps in the data could be filled the resulting volume would serve the intended purpose. This decision may seem strange in view of disagreements if not contradictions which are to be found in the text. However, most of these are due to our lack of knowledge or to the lack of understanding of the approaches to a single problem which cover a number of fields. It is clear that these present discrepancies are of extreme value; they are some of the problems to be faced in the future.

Unfortunately, various circumstances have prevented the inclusion of several papers which were scheduled on the original program. At the date of

the symposium, we had just been plunged into war and nobody could foresee or even conceive what its effects might be. As is well known, everyone soon became involved in projects which seriously interrupted normal work. As a result, some of the contributions could not be finished; others were not completed until 1943 or after. Nevertheless, it was believed that the data which finally accumulated justified the attempt to publish them. The volume was not published until this late date for numerous reasons. A change in editor, paper shortage, extra-curricula duties of everybody concerned and the other reasons which are too commonly known to require comment. The final delay of eight months caused by a shortage of skilled typesetters was an unexpected misfortune.

The basic research for papers in this volume was nearly complete in 1941. Since that time, some aspects of various discussions have been the subject of more recent work. However, in no case have these newer analyses significantly modified the hypotheses set forth in the present volume. In fact, the importance of the older ideas is frequently enhanced by subsequent work. It is important that as the reader analyses the arguments he remember that they were prepared in 1941.

The Peabody Foundation is profoundly grateful to the authors who, with great patience and without complaint, have suffered the long delay in publication. Furthermore, their unqualified cooperation has lightened the complicated editorial task of assembling the divergent material into a unit which covers so much of the Anthropological field. There are others whose names do not appear in these pages. They have contributed mightily to the success of the undertaking. The customary expressions of appreciation in a preface have the appearance of empty platitudes when actually they are not. We may hope that during personal contacts those who here remain anonymous have learned how much their valued contributions have meant to all of us.

A number of individuals and institutions have joined with the Peabody Foundation and the authors in the recognition of Dr. Speck's invaluable and frequently unique contribution to our knowledge of Anthropology of northeastern North America. Generous contributions to aid in the publication of the volume have been made by the Brinton Fund of the Philadelphia Anthropological Society, The University of Pennsylvania, Dr. Charles W. Burr, and others.

FREDERICK JOHNSON

## CONTENTS

|   |     |
|---|-----|
| PREFACE . . . . .   | vii |
| THE ENVIRONMENT OF THE NORTHEAST. Douglas S. Byers . . . . .  | 3   |
| A CULTURAL PERSPECTIVE OF NORTHEASTERN AREA ARCHAEOLOGY.<br>W. C. McKern . . . . .  | 33  |
| CULTURAL CHANGE AND CONTINUITY IN EASTERN UNITED STATES<br>ARCHAEOLOGY. James B. Griffin . . . . .  | 37  |
| ARCHAEOLOGICAL MANIFESTATIONS AND RELATIVE CHRONOLOGY IN<br>THE NORTHEAST. William A. Ritchie . . . . .                                   | 96  |
| THE IMPORTANCE OF THE ESKIMO IN NORTHEASTERN ARCHAEOLOGY.<br>Frederica de Laguna . . . . .  | 106 |
| NORTHEASTERN ARCHAEOLOGY AND GENERAL TRENDS IN THE NORTHERN FOREST ZONE. Albert C. Spaulding . . . . .                                    | 143 |
| PHYSICAL TYPES OF THE NORTHEAST. W. W. Howells . . . . .  | 168 |
| LINGUISTIC CONSIDERATIONS OF NORTHEASTERN NORTH AMERICA.<br>Carl F. and E. W. Voegelin . . . . .  | 178 |
| SOME PSYCHOLOGICAL CHARACTERISTICS OF THE NORTHEASTERN INDIANS. A. I. Hallowell . . . . .   | 195 |
| THE MYTHOLOGY OF THE NORTHERN AND NORTHEASTERN ALGONKIANS IN REFERENCE TO ALGONKIAN MYTHOLOGY AS A WHOLE.<br>Margaret W. Fisher . . . . . | 226 |
| THE CULTURE OF THE NORTHEASTERN INDIAN HUNTERS: A DESCRIPTIVE SURVEY. Regina Flannery . . . . .   | 263 |
| THE CULTURE OF THE NORTHEASTERN INDIAN HUNTERS: A RECONSTRUCTIVE INTERPRETATION. John M. Cooper . . . . .                                 | 272 |
| BIBLIOGRAPHY . . . . .  | 307 |

## PLATE

## PLATE I

|  |                    |     |
|--|--------------------|-----|
| Crania from Maine and New York . . . . . | <i>facing page</i> | 170 |
|--|--------------------|-----|

## FIGURES

|  |                    |     |
|--|--------------------|-----|
| 1. Schematic Presentation of Cultural Units in the Northern Part of Eastern United States . . . . .                | <i>facing page</i> | 41  |
| 2. Schematic Presentation of Cultural Units in the Southern Part of Eastern United States . . . . .                | <i>facing page</i> | 43  |
| 3. Paleo-Indian groups in the United States . . . . .  |                    | 41  |
| 4. Transitional and Early Woodland Groups in the United States .   |                    | 44  |
| 5. Hopewell and Middle Woodland Groups in the United States .  |                    | 61  |
| 6. Early Mississippi and Related Groups in the United States .   |                    | 76  |
| 7. Late Mississippi and Related Groups in the United States .  |                    | 76  |
| 8. Map and Diagram of Suggested Chronology of Northern Cultures  |                    | 108 |
| 9. Synoptic Series of Dorset Toggle Harpoon Heads . . . . .  |                    | 112 |
| 10. Dorset Type 1 Harpoon Heads Compared with Those of Other Cultures . . . . .                                    |                    | 114 |
| 11. Dorset Harpoon Heads with Traces of Side Blades Compared with Related Types in Other Eskimo Cultures . . . . . |                    | 115 |
| 12. Dorset Harpoon Heads with Slit Sockets Compared with Relative Types from Other Cultures . . . . .              |                    | 116 |
| 13. Modern and Protohistoric Central Eskimo, Nova Scotian and Iroquoian Harpoon Heads . . . . .                    |                    | 117 |
| 14. Synoptic Series of Dorset Barbed Points . . . . .  |                    | 119 |
| 15. Series of Semi-Lunar Knives from Indian Sites . . . . .  |                    | 124 |
| 16. Synoptic Series of Dorset Double-edged Slate Blades . . . . .  |                    | 127 |
| 17. Double-edged Slate Blades Without Barbs, from Northeastern Indian Sites . . . . .                              |                    | 128 |
| 18. Double-edged Slate Blades with Notches and Barbs from Northeastern Indian Sites . . . . .                      |                    | 129 |
| 19. Synoptic Series of Dorset Chipped Stone Artifacts . . . . .  |                    | 136 |
| 20. Large Chipped Stone Blades from Newfoundland . . . . .   |                    | 138 |
| 21. Forest Regions of the Northern Hemisphere . . . . .  |                    | 144 |

## TABLES

|   |     |
|---|-----|
| Table I. Mean Measurements of Northeastern Crania . . . . . | 169 |
| Table II. Culture-Hero Series. . . . .                      | 238 |
| Table III. Trickster Tales . . . . .                        | 241 |
| Table IV. Phallic Tales . . . . .                           | 247 |
| Table V. Cannibal Tales . . . . .                           | 248 |
| Table VI. Tales of Adventure. . . . .                       | 248 |
| Table VII. Tales of Passion . . . . .                       | 250 |
| Table VIII. Animal Tales . . . . .                          | 251 |
| Table IX. Animals in their Relations to Humans . . . . .    | 252 |



MAN IN NORTHEASTERN  
NORTH AMERICA



# THE ENVIRONMENT OF THE NORTHEAST

DOUGLAS S. BYERS

THE papers in this volume, each prepared by a different author, share, in common, a concern with the northeastern portion of the continent of North America. In the now commonly accepted scheme of things, man entered the New World from Asia, via Bering Strait, in a series of migrations. Many accounts imply that once they had reached America, the uppermost desire in the minds of the new immigrants was to get to a place which was warmer, be it the high plains or the Valley of Mexico. There are certain conditions that we must bear in mind, however, and the primary one is that these newcomers must have crossed the Strait with some specific purpose in mind—perhaps the hunting of game, which was doubtless of paramount importance in the economy of the immigrants. It is to be presumed that the Alaskan herds which may have been the initial attraction, must have supplied any need for food for some time. We must remember, too, that no matter what the stage in the climatic cycle, whether more rigorous or less rigorous than it is at the present time, climate on the Asiatic side of the Strait cannot have been too unlike climate on the Alaskan side. In other words, people who made the crossing were already preconditioned, to a certain extent, to life in Alaska; there was not in their minds the fear of a northern winter which Chambers of Commerce of winter resort cities have instilled in the minds of modern Americans. Travelers had no folders advertising the beauties of the Caribbean, of Mexico, or of Southern California.

If we are correct in assuming that man was primarily interested in game as a source of food, it would follow that man's travels would be guided by the movements of herds of game. He would follow the type of game in which he was interested. To a people with a liking for animals of the northern forests, and for life in those forests, the path to the northeast may have been the path to the Promised Land. Once that pathway was open to travelers, they could have moved across the northern forested belt into the northeastern quarter of the continent. However, as we shall see, there is reason to think a direct road may not have been open at an early date.

It was originally proposed that our discussion be confined to the northeastern quarter of the continent of North America. It soon became evident that it was impossible to do so. The bounds which were originally set limited

the region to be discussed to that territory lying north of a line drawn from Chesapeake Bay to the joining of the Ohio and Mississippi rivers, and lying east of a line drawn from that point, via the Red River Valley and Lake Winnipeg, to Churchill, on Hudson Bay. The very nature of man's activities render invalid any but the most compelling of boundaries; man's ability to wander at will, his catholic interest in the inventions of his fellows and in their potentialities as mates soon override any arbitrary divisions.

And so it will be found that although the papers in this volume are concerned primarily with the northeastern part of the continent, authors have found it imperative to cross our arbitrary lines in order to follow a trait, or discover a similarity to traits found in the Northeast. Various approaches to the data followed by the authors, have completely broken down the boundaries.

Furthermore, in nature itself there are no such sharp boundaries. Across northern North America sweeps the taiga—the great boreal forest—spreading a green shawl over the shoulders of the continent from Atlantic to Pacific. It shows minor variations in texture, and there is a rent in the forest where grasslands run northward to the Mackenzie Valley. Southward, deciduous forests cover the Atlantic coastal plain and the uplands, spreading over the eastern drainage of the Mississippi and offering an easy transition to less rigorous climates.

However, from superficial examination it appears that there is nothing common to all parts of the area save that trees grow on the greater part of the land area, that birds and animals live in the cover, and that fish swim in the waters: even the forests vary widely in type, while the animal life is by no means uniform in species or varieties.

The northeastern quarter of the continent is, in general, characterized by low relief. Much of it is a very old land surface, eroded and worn by various processes of nature until even the points of highest relief are smoothed and rounded. It is, in the main, well watered.

North of the Great Lakes and the St. Lawrence Valley lies the Canadian Shield, consisting chiefly of crystalline rocks of pre-Cambrian age on which are remnants of even older formations, often highly metamorphosed.

The geology of the eastern border of the continent is complicated. The Appalachian highland belt along its entire length has been the scene of successive periods of mountain building and of erosion. Beneath the peneplained land surface, the level of which is represented to-day by concordant levels of the summits of hills and mountains, lie the roots of old mountains. Following an elevation of the land surface, rejuvenated streams cut into

the peneplain again, etching out all but the more resistant rocks to form a mature topography in which the harder beds, notwithstanding the erosive powers of streams, reflect the structure of the long-vanished ancient summits. Those rocks which have survived are, to a large extent, crystalline, igneous and metamorphic rocks; only in restricted localities of the Appalachian belt are undeformed sedimentaries to be found.

Throughout the great wedge-shaped region lying between the Great Lakes and the Allegheny plateau there occurred periods of deposition in shallow seas or swamps, giving rise to younger sediments. These escaped deformation during the great crustal movements along the eastern border of the continent, and the rocks are not metamorphosed. In places, the older sediments have also escaped metamorphosis.

In the undeformed or partly deformed sedimentaries, are to be found the most easily worked of the materials that have been used by man for chipped tools: here are the flints or cherts, and chalcedonies. Within the area of the Canadian Shield and the Appalachian highlands, successive earth movements have compressed and elevated the rocks, while alternating cycles of erosion have removed nearly all except the harder rocks. Throughout most of this area, felsites, quartzites, and the even more refractory crystallines are, in general, all that the country rock offers to the stone chipper. However, small pockets of silicious stones, jaspers, chalcedonies, or cherts, occurring in certain localities, have escaped the destructive forces of time. On occasion these deposits may have been used by man to arm his weapons, an act most inconsiderate of succeeding archaeologists who are sometimes tempted to assume that primitive man traded to great distances for these "special" points.

To the complex geological processes that gave rise to the Appalachian highland belt we may attribute the remarkable mineral richness which is characteristic of some localities. While it is true that the minerals do not occur in quantity or quality to compete with commercial sources at the present time, many deposits worked in Colonial and Revolutionary times, now of insignificant proportions, provided much of the metal for our growing country. To Indians without knowledge of the processes of smelting ores and refining metals, these minerals can have been of no conceivable value save as they provided pigments or perhaps prettily colored stones.

Of more significance is the fact that at least in parts of Connecticut and Massachusetts native copper occurred, associated with the ores or in glacial deposits. While there is a possibility that small deposits of native copper occurred in other regions, it can be definitely stated that nuggets of copper have been collected from a number of places, among them: Whately,

Massachusetts; Cheshire, Mount Carmel, Simsbury, Granby, Bristol, South Meriden, and New Haven, Connecticut.<sup>1</sup>

I am deeply indebted to Mr. Leo D. Otis, of the Museum of Natural History, Springfield, Massachusetts, for calling this matter to my attention and for supplying the references cited above. The Museum of Natural History, of Springfield, kindly presented a nugget from the Golden Parlor Mine, South Meriden, Connecticut, to the R. S. Peabody Foundation. This nugget weighs three ounces. A nugget collected in Whately by Hitchcock, and reported by him in the *American Journal of Science*, First Series, Volume VI, 1823, weighed 17 ounces. This, together with a second specimen weighing two and one-half pounds, and also from Whately, were in the mineral collection of Amherst College. A mass weighing 200 pounds, found near New Haven, was in glacial gravels.<sup>2</sup> Dr. Lovewell informs me that this nugget is bracketed on the wall of the Hall of Minerals, Peabody Museum, New Haven. Our three-ounce piece is large enough for a spear point or two arrow points. One may judge, in proportion, of the possibilities offered by these three larger specimens here mentioned.

Until analyses of copper from sources in New England can be made, and until analyses of copper artifacts from the same region can be compared with them, it is not safe to say definitely whether trade from the west, be it under Adena or Hopewellian aegis or not, brought copper to New England or if the source was more immediate. That copper was used by the Indians before it could have been obtained from European sources we know from excavation of specimens and also from Verrazano's account of the Indians of Narragansett Bay in 1524. According to *Sailors' Narratives of New England Voyages*, compiled by George Parker Winship, Gosnold, in 1602, found the Indians of Buzzard's Bay, Massachusetts, wearing chains, earrings and collars of copper, and using the metal to head their arrows. Gosnold "was desirous to vnderstand where they had such store of this metall, and made signes to one of them (with whom I was verie familiar) who taking a piece of Copper in his hand, made a hole with his finger in the ground, and withall, pointed to the maine from whence they came."<sup>3</sup>

He may have told the truth in spite of what archaeologists have guessed since then.

Across all but the extreme southern part of the region the great Pleistocene ice sheets moved like great rasps, smoothing and leveling hills and mountains, dragging the plucked material along and grinding it across the surface of the underlying land. This ice carried with it in the drift, copper

<sup>1</sup> Emerson, 1895, pp. 58-59; Schairer, J. F., 1931, pp. 43-44, 103.

<sup>2</sup> Schairer, 1931, pp. 43-44.

<sup>3</sup> Winship, 1905, pp. 43-44.

nuggets from regions where that metal occurs in outcrops to places where it is not found in the underlying rock, spreading, as well, an assortment of tractable and intractable stone over regions in which only intractable rocks were indigenous. The ice accomplished another feat—it removed the mantle of surface soil from much of the Canadian shield and deposited a blanket of intermingled clay, gravel, and boulders, known as till, over much of the land in varying degrees of depth. Dams of till closed existing drainage channels, in consequence, streams were forced to alter their courses and to cut new valleys through glacial debris. In the bare rock of the Canadian shield many basins were gouged, and in these and in valleys dammed by drift, thousands of lakes formed. Many of these lakes are connected by a network of waterways.

The great weight of ice depressed the land as far south as a line from about Boston to the southern end of Lake Michigan. South of this so-called "hinge line," the land was not depressed by the ice, but progressively northward from this limit the land was pushed down to a greater and greater degree, reaching its maximal depression at the center of the ice sheet. Around Saulte Sainte Marie the depression was as great as 500 feet. Following melting of the ice, recoil was slow; the sea invaded parts of the continent now far removed from tidewater, permitting seals to enter the Ottawa River from the Champlain Sea. Skeletons of two whales found in bogs above glacial deposits in Michigan attest the extent of submergence which allowed these great marine mammals to penetrate well toward the center of the continent.<sup>4</sup> As the ice sheets withdrew, land surfaces commenced their spasmodic recovery to "normal" levels. Return to the modern vertical stand was achieved by periods of upwarping interspersed by periods of stability or even of sinking.<sup>5</sup> During the process, man appeared on the scene.

At Boston, recent excavation for the foundations of a building erected on filled-in mud flats of the Back Bay has uncovered a great number of stakes that had been driven into the upper end of a sloping layer of fresh-water peat that was "drowned" by salt water. The evidence clearly indicates that these stakes had been driven at a time when silting had begun over the lower portions of the slope, but before the entire layer had been covered. Knox is of the opinion that the peat was formed in the Sub-Boreal,<sup>6</sup> while Benninghoff believes that its formation dates from late Sub-Boreal or early Sub-Atlantic time.<sup>7</sup> If we allow sufficient time for the submergence of the peat, the accumulation of overlying sediments, and the construction of the weir, Knox's estimate would place the operation of the weir at about 1700—

<sup>4</sup> Schuchert and Dunbar, 1937, p. 143.

<sup>5</sup> Antevs, 1939

<sup>6</sup> Knox, in Johnson, 1942, p. 128.

<sup>7</sup> Benninghoff, in Johnson, 1942, p. 104.

1400 B.C., while Benninghoff would make the date approximately 1000 years later.<sup>8</sup> On the other hand, Antevs suggests that "a general correlation between the comparable late glacial and post-glacial climatic ages in New England (or in the mid-western states) and in Sweden . . . cannot be right" and that "the fishweir would have been in operation during the centuries preceding 2000 B.C."<sup>9</sup>

At any event, the evidence seems to record the presence of man in New England at a date anywhere from 1000–2000 B.C., with a climate not markedly different from that of the present time, but with a strand line at Boston, some thirteen and one-half feet lower than it is at present. How many ancient sites have been inundated by the consequent change in sea-level may never be known.

Sites found by Greenman on the north shore of Lake Huron are now far above the present waters of the lake. They are all associated with beaches which were formed by waters impounded by ice, or by a land surface so tilted as to prevent drainage through modern channels. Subsequent to the occupation of each, there appears to have been a rise in water level, allowing waves to beat against the sites, battering and grinding artifacts and incorporating cultural material in beaches which were extended shoreward by renewed cutting. The oldest of the sites (GL-2) is associated with a beach that is 320 feet above present water level in Lake Huron, while a second (GL-1) is 297 feet above the Lake. Stanley, who has examined the sites and adjacent territory, feels that the uppermost site may have been occupied when the front of the glacial ice was about 100 miles north of the Manitoulin district. Lacking data on which to base an estimate, he makes no attempt to gauge this period in terms of years but reckons it as belonging to a stage in the retreat from the Lake Algonquin shore line and before the formation of the Nipissing Great Lakes.<sup>10</sup>

Of the remaining sites, one (CH-1) is 56 feet above the lake, the other (KB-1) 28 feet.<sup>11</sup> Both are post-Nipissing. To them, Stanley assigned ages of approximately 2000 years and 1100–1400 years respectively.

Stanley's interpretation of the relationship between site GL-1 and the retreating Wisconsin ice implies that man was living within approximately 100 miles of the ice front. In order to maintain himself so close to glacial ice he must have been acclimated to a peri-glacial climate, with strong, cold, winds blowing out of the mass of air cooled by the continental ice sheet. It seems unlikely that in the face of these winds the present forest cover could

<sup>8</sup> Johnson, 1942, p. 192.

<sup>9</sup> Antevs, 1943, p. 306.

<sup>10</sup> Greenman and Stanley, 1943; Greenman, 1943.

<sup>11</sup> Greenman and Stanley, 1941; 1940.

have yet been established. No other site has yet supplied us with evidence that man lived in such close proximity to the glaciers.

The Boylston Street Fishweir, and Greenman's sites CH-1 and KB-1 demonstrate that rather marked, and comparatively recent changes in level may have occurred along the coast as well as in the Great Lakes basin. Sites of the Thule culture, which appears to have immediately antedated the modern Eskimo in much of the Arctic, are associated with raised beaches about Hudson Bay, bearing evidence that recovery from the effects of the Pleistocene glaciation were still continuing after man's arrival on the northern scene.<sup>12</sup>

As has been noted, relief is low throughout the northeast, and, as a consequence, provides few natural barriers to travel. The highlands, confined to the much peneplained and eroded Appalachian belt and the even more severely peneplained Canadian Shield, reach their climax in the Presidential Range of the White Mountains of New Hampshire, with summits above 5000 feet high, of which Mount Washington, with an elevation of 6293 feet, is the highest. No peaks north of the Black Mountains of Tennessee attain this height, although scattered mountains or even mountain groups exceed 4000 or 5000 feet. The Canadian Shield has even less relief. This great mass of Archean rocks, shaped something like a great U with its center depressed, and tilted slightly to one side, reaches a culmination of 5000 feet in the Nachvak mountains of Labrador.

Through the uplands, rivers have cut valleys, some of which antedate erosion of the land to its present state. Of these, the valleys of the Delaware, Susquehanna, and Potomac are most famous for their water gaps through the eastern ridge of the Appalachian system. Numberless gaps and valleys occur throughout this system, and nowhere can it be considered a barrier to travel, though its ridges are inhospitable and, in winter, difficult of traverse. The St. Lawrence Valley and the Great Lakes provide a ready avenue between the Gulf of St. Lawrence and the southwestern part of the region; their tributary streams interlock with tributaries of the Ohio and Mississippi rivers. From Lake Ontario, the Mohawk Valley affords an easy passageway to the Hudson, readily traversed in a canoe. Lakes and streams provide waterways through all the northern part of the area.

Climate throughout the northeast is characterized by great variations between summer and winter temperatures such as are experienced in climates of the continental class, in which control of temperatures by land

<sup>12</sup> Mathiassen, 1927.

masses results in extremes of heat and cold. Oceans act to produce a uniformity of climate, without great deviations from the mean temperature in either direction. Although the eastern coasts of the continent face the Atlantic Ocean, the tempering effect of this great body of water is felt for only a short distance inland, since the prevailing winds are from the westerly quarter and phases of climate move from west to east throughout the northern hemisphere. The continental type of climate may be said to prevail down to tidewater along the eastern seaboard.

Locally, some tempering effect is observable around the many large lakes which dot the northeast, a fact which has led man to frequent their shores in summer time. The Great Lakes exercise sufficient control over climate in their immediate vicinity to influence forest cover. In the surrounding territory, winter temperatures do not sink to such low levels as they do at stations somewhat more removed, nor do spring and summer temperatures rise as high. Furthermore, the rate of change is neither as rapid within this sphere of influence nor is the march of temperature synchronous with that in areas uninfluenced by the Lakes.<sup>13</sup>

Precipitation is spread fairly evenly throughout the year, save in the more westerly portions in which winters are prevailingly drier than they are in the east. In winter, cold, dry, continental air, of high barometric pressure, dominates the central portion of the continent, warding off cyclonic storms which bring moisture. Tracks of such storms converge over New England and eastern Canada, bringing a winter precipitation, in the form of snow, which may even exceed summer rainfall. Here total snowfall may amount to eighty inches, although, due to evaporation and settling this amount is only found locally all at one time. In this belt are the winter resorts for skiers and snowshoers. Here, also, the Indian found winter travel impossible without snowshoes.

The climatic belts have been divided into humid eastern and subhumid western portions. Such division is especially marked in the subarctic and tundra zones.

Along the Ohio Valley is a fringe of warmer climate in which winter temperatures are not as severe as they are a few miles north. Travelers crossing the valley will note this fact, especially in springtime, when crops in the valley are far ahead of those to the north. With this slight exception, the climates of the northeast are dominated by a cold winter and a long frost season; poleward, the winters become more bitter, the season of frost longer, spring and autumn less easily distinguished from the long winters

<sup>13</sup> Leighly, 1942.

and short summers. Because of dominance by cold winters, the climates have been classed as microthermal.<sup>14</sup>

Humid continental climate prevails northward as far as a line drawn from the mid-part of Lake Winnipeg, along the north shore of Lake Superior, thence eastward to the vicinity of Lake St. John, and across the St. Lawrence to cut off the Gaspé Peninsula. North of this line lies the belt of subarctic climate. Tundra climate, a phase of arctic climate, prevails along the west shore of Hudson's Bay and in Quebec and Labrador north of a line drawn between the mouth of James Bay and the Strait of Belle Isle. This line represents the warmest month isotherm of 50°, the poleward limit of forest growth.

The humid continental belt may be divided into two phases, one having long summers, the other, short ones. The tier of states along the Ohio River, the middle Atlantic states north to central New York, and southern New England all experience the long summer phase while the short summer phase prevails over the northern tier of states and the Canadian provinces to the limits just described. This division is of somewhat more than academic importance to our discussion, for the division between long summer and short summer phases lies remarkably close to the limit of 100 frost-free days which marks the northern limit of commercial corn agriculture. Due to a number of factors, conditions may vary locally but it is safe to say that periods of 100 consecutive frost-free days are not experienced very far north of the southern border of the short-summer phase of humid continental climate. Hence, the modern commercial corn belt lies southward of this line, since all but some of the more recently-developed strains of hybrid corn and some specialized strains of flint and sweet corn require more than 100 consecutive frost-free days to mature seed. In the face of this statement it must be observed that corn was successfully grown by such people as the Arikara and Mandan on the upper Missouri River, that Cartier observed corn growing at Hochelaga, and that Champlain records corn in the St. Lawrence and Ottawa Valleys. All these places lie well within the belt of short-summer climate.

Although corn has been grown so far north in the belt of short-summer climate, it is in danger of killing frosts which may follow a flow of polar air into low latitudes. This does not happen frequently during the growing season, but it is, nevertheless, a hazard which faced Indian farmers as it faces whites to-day. It is enough to inhibit the general northward spread of a culture depending primarily on corn agriculture for its sustenance.

<sup>14</sup> Finch and Trewartha, 1936, Pl. V and Chap. XI is the source for much of the discussion of climate.

In the belt of subarctic climate, corn agriculture is impossible. Summer days may be long and hot, with maximum temperatures of eighty degrees or better, but nights are cool. Summer is short, preceded by a brief spring and followed by an equally brief autumn. Winter temperatures are bitter in the extreme, while snowfall is moderate, save in the more easterly portions. The extremely short summers and the possibility that frost may come on the heels of a wind from the arctic have prevented the growing of many crops.<sup>15</sup> This factor has probably hindered settlement of the region by Europeans more than have the cold winters. Agriculture as practiced by the Indians was based chiefly on plants of semi-tropical origin. They did not cultivate crops such as the cereal grains of the Old World, or the root or leaf vegetables, which Europeans have adapted to cultivation in the short-summer climates and even in subarctic regions. In subarctic regions the Indians depended on game or fish, augmenting their diet by such natural vegetable foods as they might be able to find. This was chiefly in the form of berries, certain roots or the contents of the stomachs of caribou. Theirs was an economy based on hunting and ice-fishing in winter, a traditional way of life, elements of which persisted southward into the lands where the short summer phase of climate prevails.

Vegetation over the northeastern quarter of the continent is widely divergent in kind. The ultimate to which any group of vegetation can attain through the normal succession has been termed the climax formation. Three climaxes—the tundra formation, the forest formation, and the grassland formation—occur within the area. Most of the land surface is forested. However, tundra is found on the southwestern shore of Hudson Bay, and in the northern part of the Labrador Peninsula, as well. Extensive expanses of treeless bog or muskeg are characteristic of poorly drained depressions throughout the boreal forest region. The monotony of these wastes is broken only by clumps of trees located in the river valleys. True grassland appears only on the extreme western border of the area, while south of the western Great Lakes prairies or natural openings interrupt the forest.

The forests themselves are varied, both as to specific composition and grouping into communities, reflecting varying factors of climate, soil, and exposure. Three primary regions may be distinguished in the northeastern quarter of the continent. The most northerly is the coniferous, or boreal

<sup>15</sup> Raup, 1945, discusses some of the difficulties to be met in pushing agriculture northward within the western part of this zone.

forest; the most southerly, the deciduous forest of broadleaved hardwood trees. Between lies a forest transitional in make-up and called by various names, in which there is a complex mingling of conifers and hardwoods, each in various forms. It is possible to subdivide the forest regions, in which the presence of climax dominants produces a broad uniformity of appearance and habit, into subareas or sections on the basis of the association of subdominants with dominant species in communities of somewhat different constitution.<sup>16</sup>

The boreal forest, practically co-terminous with the zone of subarctic climate, stretches in a great belt south of the tundra, from Alaska and the Mackenzie Valley to the Gulf of St. Lawrence and Labrador. Its southern limits are located approximately at the southern end of Lake Winnipeg, the north shore of Lake Superior, the Algoma district of Ontario eastward to Quebec, and the St. Lawrence. This boundary is broken by a tongue of Great Lakes-St. Lawrence forest which extends up the Saguenay to Lake St. John. The boreal forest is principally a forest of conifers. Toward the tundra, the trees are stunted, and openly spaced, but southward it is a forest of closely set tall trees growing from a deep carpet of mosses. The characteristic species, the white spruce, ranges throughout the region; with it are associated other conifers, some over areas of wide extent, which contribute to the character of the section and even attain to local dominance. These include balsam fir, black spruce, tamarack, and jack pine. An admixture of broad-leaved deciduous trees, which is also important, includes white birch, almost universal in its distribution, aspens, and balsam poplars. Southwestward, in the transition zone between grassland and boreal forest, poplars attain dominance, and are there accompanied by other deciduous trees such as burr oak, basswood, elm, and ash. In sections which are sandy, or on dry and rocky ridges, jackpine associations of varying character are dominant, while poorly drained land supports associations of black spruce and tamarack.

By contrast, the deciduous forests of the south present an almost incredible variation of combinations from a wealth of species not duplicated anywhere else in the world except in eastern Asia. Perhaps the richest region, from the point of view of variation in communities, lies in the southern Appalachians, just at the southern limits of the area under discussion. Here are found, within a relatively small territory, mixtures of species that defy subdivision and analysis, seemingly sorted from an extensive store of species by means of selective factors of environment. The principal trees

<sup>16</sup> Halliday, 1937; Raup, 1942, is the source of much of the following matter.

found in such associations are oaks, maples, beech, hemlock, hickory, basswood, and tulip tree. Chestnuts played an important role before the blight eliminated them. Beneath the canopy of forest trees, smaller trees, shrubs, and herbaceous plants form an undergrowth in several lower stories which is closely connected with forest types that have been segregated according to factors of soil, exposure, temperature, and moisture.<sup>17</sup>

This rich storehouse is pictured by some writers as the area into which deciduous forests from the north were crowded by the advancing Pleistocene ice. From it, they would have us believe, the forests began their northward advance as soon as the land became fit, following the retreat of the ice. Deciduous forests in one form or another extend northward from Kentucky and Virginia over Pennsylvania and New York, New Jersey, parts of New England, southern Ontario, southern and central Michigan, Ohio, Indiana, and Illinois. It is believed by some that this forest spread at first in a relatively unsorted form, and that subsequent periods of warmer and drier climate have eliminated from certain areas species with preferences for cooler and moister climates, and that these species, in turn, have migrated farther north than those with a predilection for the warmer drier regions.

South of the Great Lakes and the St. Lawrence the forest may be divided into two categories, depending upon the prevalence or scarcity of oaks. Thus we see that through Illinois, Indiana, and Ohio, and southern New England the forests consist largely of various species of oaks with a large representation of hickory, particularly west of the mountains and in southern New England. Before the blight, the chestnut was one of the principal trees, particularly in the Appalachian and New England phases of this forest.<sup>18</sup>

An aspect, commonly called the "northern hardwood forest," spreads northward into northern Wisconsin, central Michigan, parts of southern Ontario, northern Pennsylvania and adjacent New York. It also covers the higher slopes of the Appalachians and lower slopes of the White and Green Mountains of New England. The trees of which it is chiefly composed are sugar maple, yellow birch, and beech, with a scattering of ironwood, basswood, ash, elm, black birch and red oak.<sup>19</sup>

Centering on the Great Lakes and the St. Lawrence Valley but with an extension south through central and parts of northern New England, central New York, the mountains of Pennsylvania, West Virginia, western Maryland, and Virginia is a forest that is in many respects transitional between

<sup>17</sup> Braun, 1940a, 1940b.

<sup>18</sup> Braun, 1928, 1938; Sears, 1933.

<sup>19</sup> Raup, 1942.

the boreal forest and the deciduous forest. Called the Great Lakes-St. Lawrence forest, or the Hemlock-White Pine-Northern Hardwood forest,<sup>20</sup> it is composed of trees which fall into four groups: (1) those with range characteristically northern, but which extend southward into the transitional zone, such as balsam fir and white spruce, (2) those with range centering within the region and with only insignificant extensions beyond it, including hemlock, eastern white pine, and yellow birch, (3) those with centers of distribution within the region or immediately to the south, but which range well to the south and which are constituents of the deciduous forests, including sugar maple and basswood, and (4) those with centers of distribution to the south of the region, and forming important elements widely distributed in the deciduous forests, such as the beech and white ash. Oaks, except for the presence of red oaks in some areas, hickories, tulip trees, chestnuts and other "relatively southern" hardwoods and shrubs are conspicuous by their absence in comparison with the climax deciduous forests farther south.<sup>21</sup> The red spruce, with range restricted to the eastern upland belt, takes the place of the northern white spruce in appropriate situations in the area southward from Maine, so that the spruce-fir forest of most of New England consists of fir mixed with red spruce.

The character of the Great Lakes-St. Lawrence forest varies widely, and although it is transitional as far as the forms of the trees are concerned, certain aspects are peculiar to the area. Many seem to be the result of factors of slope, exposure, drainage, and to some extent, of soils, although this latter factor has not been widely explored. Most patent in the latter class are the apparent associations of white, pitch, and red pines that are to be found on light sandy soils: for reasons as yet unexplained, red pine may occur in almost pure stands in one instance, white pine in another. Pineries formerly extended over wide stretches of sandy soil in states south of the Great Lakes.<sup>22</sup> In poorly drained areas on the northern plateau of Maine, the northern Michigan peninsula and in other scattered localities there are forests of white spruce, black spruce, tamarack, and eastern white cedar in varying associations. Swamp forests characteristic of the Great Lakes-St. Lawrence region are those in which black spruce, white cedar, or an association of black ash, elm and red maple are the dominant species. In eastern Virginia and New Jersey, and on Long Island and Cape Cod there

<sup>20</sup> Nichols, 1935.

<sup>21</sup> Nichols, 1935, p. 417.

<sup>22</sup> There is some reason to believe that these pure stands of pine extending over wide territories may be the succession following burning or clearing by the Indians, particularly when all the trees are of approximately the same age. This may be evidence of a former burning of the woods by man or by a naturally caused forest fire. Cf. Gordon, R. B., 1940, p. 15.

is another mixed phase which is composed principally of pitch pine mixed with various oaks.

Effects of local variations in soil, topography, and climate, to which allusions have been made before, appear to be particularly marked in the transitional forest, which has been referred to as a region of tension between forest types. Here it is possible to find correlations between patterns of forest distributions and variations in these factors.<sup>23</sup> Warm southerly slopes far northward in the northern hardwood region will have forests of central hardwoods, while cool northerly slopes and ravines in the oak regions will have rich woods of beech, maple, and hemlock. In the spruce-fir forests of northern New England there are many areas of northern hardwoods and white pine, usually on southerly slopes of hills, ridges and mountains. In other places, especially in the level country south of the Great Lakes, correlations between the distribution of central and northern hardwood types and the local distribution of soils have been noted.<sup>24</sup>

A canvass of the trees themselves, rather than the forest, is important from the economic importance of certain species in the life of primitive man. Canoe birch (*B. papyrifera*) from which the Indians obtained bark for canoes, wigwams, dishes, boxes, water buckets and cooking utensils, is found from the boreal forests southward into the transitional forest. On the Atlantic Coast, its southern limit lies near Cape Anne, whence it runs westward through southern Massachusetts and northern Connecticut to the highlands of New York and Pennsylvania. From the Adirondacks, this limit swings northward to the southern shores of Georgian Bay, peninsular Michigan, central Wisconsin and Minnesota. Throughout the more southerly and extreme northerly portions of its range the tree is stunted. In those regions in which it is impossible to find trees of a size to supply the single large strips of bark desirable for canoe and wigwam building, the Indians were forced to fasten small pieces together to make suitable sheets. Basswood, the source of fiber for baskets, capes, and other textiles grows northward as far as the northern limits of the transitional forests. Mr. Frederick

<sup>23</sup> In this connection see Dansereau, 1944, for a discussion of the complexity of the border between this forest and the boreal forest and, in particular, the possible effects of local variations in topography, exposure, water supply, and similar factors.

<sup>24</sup> The literature on this subject is too detailed and scattered to permit citation here. Persons interested in this field would do well to consult, among others, the many papers under forestry and geography that have been published in the *Papers of the Michigan Academy of Science, Arts, and Letters*. Two articles which have been published by Hough indicate that in regions in which there is not a "tension," there is not a differentiation of growth according to soil types, and that, in fact, "regardless of soil types nature tends to reestablish the hemlock-beech climatic climax on all habitats in the High Plateau region of Pennsylvania."

Johnson informs me that he has seen interesting examples of birchbark boxes sewed with basswood fiber in place of the more commonly used spruce root. Nut trees, with the exceptions of red oak and beech, cease to be important as forest trees in north central New England, the northern border of the Ontario Peninsula, the Michigan Peninsula, and northern Minnesota. Spruce, the roots of which were used for sewing, has a restricted distribution south of the northern portions of the transitional forest. Berry-bearing shrubs and herbaceous plants in many species are found throughout the area, the hardier shrubs and creeping vines extending northward into the boreal forest zone and even into the tundra zone in some localities.

There is little virgin growth left in the region occupied by southern outliers of the transitional forest in the eastern United States, but from the few stands in existence, and from the accounts of travelers who passed through the unspoiled stand it appears to have been a high, light forest, consisting principally of deciduous trees, except as noted, with tall scattered pines and hemlocks rearing their heads above the leafy canopy of the closely-set deciduous trees. A rich undergrowth of shrubs, herbaceous plants, and seedlings of certain forest trees formed a series of storeys beneath the larger trees. The conifers appear to have been scattered in islands among the deciduous growth, for many are intolerant of shade, and can only reproduce themselves in openings in the forest caused by windfalls, unless forest fires should at one time lay bare a large stretch of territory.<sup>25</sup>

It would be incorrect to believe that Indians could have lived and farmed within the forest without altering it in some way. It will be recalled that the division between the northern and southern aspects of the deciduous forest coincides approximately with the northern border of the long-summer phase of humid microthermal climate. (pp. 10-11) It will also be recalled that this is the approximate northern boundary of the commercial corn belt, but that Indians are known to have grown corn northward into the region of northern hardwoods and transitional forest.

Indian corn fields have been identified in almost every county in Michigan; Hinsdale<sup>26</sup> lists some scattered over the state from north to south.

<sup>25</sup> Hough and Forbes, 1943, pp. 308-309.

<sup>26</sup> Hinsdale, 1927, refers to Captain John Smith's account of the Indians' method of preparing the land in Virginia by girdling the trees and applying fire to the roots to kill them. The next year a crooked piece of wood was used to "beat up the weeds by the roots and in that mould they plant their corn. . . ." Parker, 1910, says: "Land for cornfields was cleared by girdling the trees in the spring and allowing them to die. The next spring the underbrush was burned off. By burning of tracts in the forests large clearings were made suitable for fields and towns. [He notes that Sagard says the Hurons girdled trees and piled branches at the foot of the tree

Some of these are described as being an acre or two in extent, others covered fifteen to twenty acres, while one, in Kalamazoo County, is said to have been "three or four miles square." Concerning cornhills in Haynes Township, Alcona County in Sections 22 and 27 "many acres in extent," which he visited in 1926, Hinsdale says:

"The land has never been plowed or the striking features now observable would have been completely obliterated. There are numerous pine stumps, the remains of trees that were lumbered forty years ago. Stumps of hardwood are more common. The hardwood was removed twenty-five years ago. The pines upon this place were large, but there were wide openings among them. The pine openings were filled in considerably with maple and birch. I am of the opinion that this hardwood has made its growth since the Indians abandoned the corn-field. At any rate, the shade was not so dense as to prevent a fair growth of corn. As stated, the ground is completely turfed over, and overgrown with low vegetation. Two years ago the fields were entirely burned over. After the fire had cleared the ground, the corn-hills were strikingly conspicuous."<sup>27</sup>

Are we to infer from this that Hinsdale believes the Indians cultivated their corn *between* the pines, which were left standing? It would seem so.

While the open and airy character of the oak forests have been ascribed by some persons to burning by the Indians, which in turn destroyed the undergrowth and seedlings, there is not a unanimity of opinion on this point.<sup>28</sup> It would probably be going too far to assume that great stretches of forest land were transformed into barren wastes. However, early writers give accounts which indicate that considerable change must have been effected.

Wood<sup>29</sup> states quite clearly ". . . The Timber of the Countrey growes straight, and tall, some trees being twenty, some thirty foot high before they spread their branches; generally the Trees be not very thicke, though there be many that will serve for Mill posts, some beeing three foote and a halfe o're. And wheras it is generally conceived, that the woods grow so thicke, that there is no more cleare ground than is hewed out by labour of man; it is nothing so; in many places, divers Acres being cleare, so that one may ride a hunting in most places of the land, if he will venture himselfe for being lost: there is no underwood saving in swamps, and low grounds that are wet, in which the English get Osiers and Hasles, and such small

where they were burned, killing the tree.] . . . Fields with standing dead trees were not considered as safe after the first year and speedy means were taken thereafter to burn them down."

<sup>27</sup> Hinsdale, 1927, p. 37.

<sup>28</sup> Raup, 1937.

<sup>29</sup> Wood, 1734, p. 16.

wood as is for their use. Of these swamps, some be ten, some twenty, some thirty miles long being preserved by the wetnesse of the soil wherein they grow; for it being the custome of the Indians to burne the wood in November, when the grasse is withered, and leaves dried, it consumes all the underwood, and rubbish, which otherwise would over grow the Country, making it unpassable, and spoile their much affected hunting: so that by this means in those places where the Indians inhabit, there is scarce a bush or bramble, or any combersome underwood to bee seene in the more champion ground: Small wood growing in these places where the fire could not come is preserved. In some places where the Indians dyed of the Plague some fourteene yeares agoe, is much underwood, as in the mid way betwixt Wessaguscus and Plimouth, because it hath not been burned; certain rivers stopping the fire from comming to cleare that place of the countrey, hath made it unusefull and troublesome to travell thorow, in so much that it is called ragged plaine, because it teares and rents the cloathes of them that passe . . . ." And on page 7 we read "For the Indians burning it to suppresse the under-wood, which else would grow all over the Countrey, the Snow falling not long after, keepes the ground warme, and with his melting conveighs the ashes into the pores of the earth which doth fatten it . . . ."

Thomas Morton<sup>30</sup> expands on the practice. "The Salvages are accustomed to set fire to the Country in all places where they come, and to burne it twize a yeare, viz: at the Spring, and the fall of the leafe. The reason that mooves them to doe so is because it would other wise be so overgrowne with underweedes that it would be all a coppice wood and the people would not be able in any wise to passe through the country out of a beaten path . . . .

"The burning of the graffe destroyes the underwoods, and so scorcheth the elder trees that it frinkes them, and hinders their grouth very much: so that he that will looke to finde large trees and good tymber must not depend on the help of a wooden prospect [This refers to Wood's *New England's Prospect*.] to finde them on the upland ground, but must seeke for them, (as I and others have done,) in the lower grounds, where the grounds are wett, when the country is fired, by reason of the snow water that remains there for a time, untill the Sunne by continuance of that hath exhaled the vapours of the earth, and dried up those places where the fire, (by reason of the moisture,) can have not power to doe them any hurt; and if he would endevoure to find out any goodly cedars, hee must not seeke for them on the higher grounds, but make his inquest for them in the vallies, for the Salvages, by this custome of theirs, have spoiled all the rest: for this custome hath bin continued from the beginninge . . . .

<sup>30</sup> Morton, 1637, pp. 172-173.

"For, when the fire is once kindled, it dilates and freades it selfe as well against, as with the winde; burning continually night and day, until a shower of raine falls to quench it.

"And this custome of firing the Country is the meanes to make it passable; and by that meanes the trees grow here and there as in our parks: and makes the Country very beautifull and commodious."

Higgeson's statement and Graves's letter bear testimony to the existence of large clearings in eastern Essex County, in Massachusetts.<sup>31</sup> Some of these may well have been natural meadows.

Van der Donck<sup>32</sup> has ascribed the custom "of burning the woods, plains and meadows in the fall of the year" and "places which are then passed over . . . in the spring in April" to three reasons: 1) to improve the hunting by burning leaves and twigs which would crackle and alarm the game; 2) "to thin out and clear the woods of all dead substances and grass, which grow better the ensuing spring"; 3) "to circumscribe and enclose the game within the lines of the fire, when it is more easily taken, and also, because the game is more easily tracked over the burned parts of the woods." This custom, termed by the Dutch colonists "bush burning" is said to have presented a "grand and sublime" appearance, especially at night, when by the light of fires burning on either side of the river it was possible to see a great distance. A very significant paragraph states

"Notwithstanding the apparent danger of the entire destruction of the woodlands by the burning, still the green trees do not suffer. The outside bark is scorched three or four feet high, which does them no injury, for the trees are not killed. It however sometimes happens that in the thick pine woods, wherein the fallen trees lie across each other, and have become dry, that the blaze ascends and strikes the tops of the trees, setting the same on fire, which is immediately increased by the resinous knots and leaves, which promote the blaze, and is passed by the wind from tree to tree, by which the entire tops of the trees are sometimes burnt off, while the bodies remain standing. Frequently great injuries are done by such fires, but the burning down of entire woods never happens . . ."

<sup>31</sup> Higgeson, 1629, p. 117, "though all the country bee as it were a thicke wood for the general, yet in divers places there is much ground cleared by the Indians, and especially about the plantation: And I am told that about three miles from us a man may stand on a little hilly place and see divers thousands of acres of ground as good as need be, and not a tree in the same." Mr. Graves' letter, on page 124, adds that "it is very beautiful in open lands, mixed with goodly woods, and again open plaines, in some places five hundred acres, some places more, some lesse, not much troublesome for to cleere for the plow to goe in, no place barren but on top of the hills. . . ."

<sup>32</sup> Van der Donck, 1656, p. 150, *passim*

That the country was not completely laid waste is further indicated by an earlier paragraph which speaks of the filling in of clearings.

"It has happened when I have been out with the natives . . . that we have come to a piece of young woodland. When I have told them, in conversation, that they would do well to clear off such land, because it would bear good corn, that they said, 'it is but twenty years since we planted corn there, and now it is woods again.' I asked them severally if it were true, when they all answered in the affirmative . . . To return to the subject: this woodland was composed of oak, nut and other kinds of wood, but principally of oak and nut; and there were several trees in the same which were a fathom in circumference. The wood was so closely grown that it was difficult to pass through it on horseback. As the wood appeared young and thrifty I give credit to the relation of the natives. I have also observed that the youngest woodlands are always covered closest with wood, and where the growth is small, 'the woods are so thick as to render walking through the same difficult. But where the woods are old, the timber is large and heavy, whereby the underwood is shaded, which causes it to die and perish."

From this we apparently must conclude either that the Indians of the New Netherlands were more careful with fire than were their contemporaries, or that Van der Donck is describing in one paragraph a piece of woodland that is at some distance from the area in which the fires were observed. Certainly there is a fine description of a series of clearings which have become overgrown, and it seems highly improbable that such could occur if the fire were allowed to "dilate" and spread as Morton and Wood would have us believe.

Flannery<sup>33</sup> has compiled references to the burning of brush either for the reasons mentioned above or for the purpose of driving game, and has noted the burning of the forests by the following tribes: Massachusetts, New Netherlands, Delaware, Delaware-Iroquois, Potomac Indians, Virginia, Carolina, Saponey, Sewee, Wyandot. It seems, therefore, that forests were burned over rather commonly, whatever the reason given by the chroniclers.

Peter Whitney's<sup>34</sup> description of Worcester County, Massachusetts, referred to by Raup<sup>35</sup> for his information regarding the forests of that portion of Massachusetts, was published in 1793, more than one hundred years after the settlement of the country by Europeans.

Although the whites seem to have taken over the custom of burning the woodlands, "open season" for this practice was limited by law to a period between March 10 and April 30. Finally, in 1743, a law was passed for-

<sup>33</sup> Flannery, 1939a, p. 14.

<sup>34</sup> Whitney, 1793.

<sup>35</sup> Raup, 1937.

bidding the practice, as it was believed to be against the best interests of the settlements.<sup>36</sup> Fifty years elapsed between the passage of this law and the publication of Whitney's book. In this period there would have been time for the forests to recover to a great extent, if we may judge from the rate at which abandoned pasture land returns to forest at the present time.

The latter half of the nineteenth century saw the publication of many of the town histories of central Massachusetts. These appear to have been written by persons who relied on old records of the various towns, and those which I have been privileged to examine do not contain any eye-witness accounts by early settlers, describing the country: there was scant time for such, when houses and barns were to be built and supplies laid in. However, two histories, that of North Brookfield, and that of Palmer, both of which were written by J. H. Temple,<sup>37</sup> make specific reference to the openness of the country. Judd's *History of Hadley*<sup>38</sup> includes similar statements. Temple says of Brookfield that "From the top of Coy's hill cattle could be seen for a distance of three miles, and deer and wild turkeys a mile away." He further says that travel by horseback was feasible all through the district since the burning of the woods kept the undergrowth down. It is also his contention that the Indians protected groves of oak, walnut, and chestnut trees which furnished them with an important part of their food supply. This may possibly have some bearing on the existence of stands of these trees noted by Whitney. Unfortunately the source of this information is not divulged, but from the references to Wood, one suspects that the "wooden prospect" may be the sole source on which Temple relied for information on this point.

Judd quotes Wood, and also Morton, Graves,<sup>39</sup> and Van der Donck, but further states that when Hadley was settled the Europeans selected open sites, ready for building or for mowing. "The intervals or rich alluvial lands upon the Connecticut and its tributary streams were more free from trees than the adjoining uplands. The first settlers of Northampton, Hadley, and Hatfield found plenty of land ready for the plow and began to raise Indian corn and other grain and to mow grass as soon as they had fixed themselves in these places. Nor did their homelots upon higher ground require much clearing . . . . In Philip's war and in later years companies of horsemen and larger bodies of foot soldiers seem to have penetrated the woods without difficulty in every direction.

"After the Indians ceased to burn over a tract of land, bushes and brambles commonly began to grow upon it. When some of the people of

<sup>36</sup> Temple, 1889, p. 20; Judd, 1863, Chap. XI; Whitney, 1793, p. 249.

<sup>37</sup> Temple, 1887, 1889.

<sup>38</sup> Judd, 1863.

<sup>39</sup> Graves.

Northampton petitioned for a plantation at Squaheag (Northfield) in 1671, they stated that the Indians had deserted the place, and that for want of inhabitants to burn the meadows and woods, the underwood had increased 'which will be very prejudicial to those that shall come to inhabit, and the longer the worse.' The inhabitants upon the Connecticut River were greatly annoyed by the bushes that sprung up so plentifully on their homelots, highways, and elsewhere. Laws compelled every man to work one day a year clearing brush from the highway."

Mather<sup>40</sup> notes that the Indians "continue in one place till they have burnt up all the *Wood* thereabouts, and then they pluck up Stakes; to follow the *Wood* which they cannot fetch home unto themselves." Indeed, in Colonial times some towns had very strict laws regarding the use of wood because of its scarcity, though whether this scarcity be due to burning by whites or by Indians is not stated.<sup>41</sup>

There seems, then, reason to believe that the forest was not the unbroken wilderness that we have been led to believe existed in pre-colonial times, but that considerable areas were cleared by fire, and maintained open by the annual burnings. Just how much of the area was completely cleared can probably never be determined. This discussion has not emphasized the fact that there were always some natural meadows along the streams.

Not all foresters subscribe to the theory that this practice could have given rise to the open type of forest. Many believe that the open park-like character attributed to these forests by the early chroniclers was a natural climax<sup>42</sup> and not to be attributed to the use of fire.

From these forests the Indians formerly harvested a yearly crop of game animals to supply meat, furs and hides, or bones for tools. Accounts of early chroniclers suggest that there were few creatures that were not used for food when they were taken.

Among the birds, wild turkeys were probably a most important source of food. They could be taken easily on their roosts which were well marked by droppings, but were more wary and difficult of approach in the open. Although the wild turkey was almost omniverous, eating insects, nuts, berries, and small fruit as well as small fish, sand-fleas, and similar pickings along

<sup>40</sup> Mather, 1702, Book III, p. 192.

<sup>41</sup> See Whitney, 1793, pp. 133, 146, 210.

<sup>42</sup> Raup, 1937. After this manuscript was submitted, Bromley, 1945, appeared. This describes the original forest, in which the more fire-resistant timber survived, while the fire-susceptible white pine, birch, hemlock, and other trees were weeded out. Dry locations such as plateaux and hill-tops supported blueberry barrens perpetuated by burning. Subsequent steps in the cutting off of the forest and the growth of sproutwood and seedlings are described in this interesting note.

shore, the northern limits of the nut-bearing trees marked the approximate northern limits of its range. Turkeys are known to have been common as far north as southern Ontario, the boundary between Massachusetts and Vermont, through central New Hampshire, and along the coast, northward to the Kennebec. A leg bone of this bird is reported to have been discovered in a shell heap on Mt. Desert island in Maine.<sup>43</sup> The northern limits of the turkey's range would set a fixed boundary for the local manufacture of turkey-feather capes, recorded by many early writers from New England.<sup>44</sup> Specimens could have been taken farther north in trade. Other birds which were commonly taken for food include partridge, quail, heath hen, passenger pigeon, spruce partridge, and ptarmigan, as well as ducks, geese, auks and brant. In the west, the sage hen replaced the heath hen in appropriate habitats.

The edge of the northern hardwoods also marks, roughly, the northern limits of the Virginia deer, for this animal feeds on young hardwood shoots, and all manner of herbaceous stuff, as well as beech nuts and lichens. By contrast, the lichens of the thick conifers are preferred by the caribou. The latter ranged southward from the tundra and boreal forests as far as central Maine. Old woodsmen in Maine and New Brunswick say that deer were not found when the country was first settled by whites, and many of them can remember their fathers telling of the departure of the caribou and the subsequent appearance of deer. Their skeletal remains are so similar that it is difficult to assign bones found in middens to either species with certainty. Moose ranged from the boreal forests south through the boggy outliers of the coniferous forests into Pennsylvania and into central Michigan, northern Wisconsin, and northern Minnesota. The elk took his place as a large game animal in the Ohio River drainage and in central New York.

The beaver seems to have been common throughout the area, save in the extreme northern portions. Cooper, and Speck and Eiseley<sup>45</sup> have already called attention to the way in which primitive conservationists preserved these animals, and were able to maintain a comparatively sedentary hunting economy by reason of the colonies of beaver which were allowed to persist

<sup>43</sup> Forbush, 1929, Vol. III, p. 427, quotes Townsend, 1881, p. 60.

<sup>44</sup> The account of the most northerly occurrence of these garments may be in Josselyn, 1675. However, Josselyn writes at times in sweeping generalities and it would be difficult to determine that turkey-feather cloaks were made in the vicinity of Black Point—Prout's Neck, just south of Portland—and that Josselyn was not describing something he had seen on his voyages up to Massachusetts. Good descriptions are to be found in Morton, Wood, Gookin, and Williams. See Flannery, 1939a, p. 44, for a more complete list of references.

<sup>45</sup> Cooper, 1939; Speck and Eiseley, 1939.

at selected locations. In addition to these important animals, there were hares, rabbits, muskrats and other fur bearers, as well as the bear. The last-named animal was found throughout all but the northern portions of the area. Among certain of the Algonkian tribes he was hunted under rigidly prescribed conditions, with attendant ceremonies.

Sea mammals frequented the coasts and penetrated into the Gulf of St. Lawrence. Seals ranged southward at least as far as New York, where winter records of them have been made within recent years. North of Cape Cod they are common residents. In shell heaps the bones of seals are common, particularly along the Maine coast. These may even establish records for ranges of species, as is the case with the bone of a Gray Seal, identified by Dr. Glover M. Allen among the collections taken from two shell heaps on Martha's Vineyard.<sup>46</sup> Such evidence confirms the writings of early travelers regarding the importance of these animals in the diet of the more northerly coastal groups. The walrus was common on Cape Sable Island, off the southwestern tip of Nova Scotia, and was the object of hunting expeditions in Colonial times. These animals are now extinct in New England, but there is a record of a specimen that landed near Gloucester in 1936, and remained on the rocks on Thatcher's Island long enough to be photographed by Mr. W. T. Redman who was then stationed in the vicinity.

Whales and blackfish are common along the more exposed coasts. Although there is some question as to whether these animals were hunted in southern New England, stranded animals appear to have been utilized, as witness the number of stranded blackfish seen by the Pilgrims on December 7, 1620, at least one of which was being cut up by Indians.<sup>47</sup> There is clear evidence that whales were hunted at least as far south as the mouth of the Penobscot, for Rosier states:

"One especiall thing is their manner of killing the Whale, which they call Powdawe; and will describe his forme; how he bloweth up the water; and that he is twelve fathoms long; and that they go in company with their King with a multitude of their boats, and strike him with a bone made in the fashion of a harping iron fastened to a rope which they make great and strong of the barke of trees, which they veare out after him, and as he riseth above water, with their arrowes they shoot him to death; when they have killed him and dragged him to shore, they call all their chief lords together, and sing a song of joy: and those chief lords, who they call Sagamos, divide the spoile, and give to every man a share, which pieces so distributed they hang up about their houses for prision: and when they boile them, they

<sup>46</sup> Byers and Johnson, 1940.

<sup>47</sup> See Mourt's Relation, pp. 151-153.

blow off the fat and put to their peaze, maiz, and other pulse which they eat.”<sup>49</sup>

It is in precisely this region that we have evidence of deep water fishing in the implements made from the swords of swordfish discovered by Rowe, in the Waterside shell heap,<sup>50</sup> and by Johnson and Byers in the Nevin shell heap. Large pieces of unworked swords show that this material was more common than would have been possible if the only source were dead fish which had been stranded by the waves.

Quantities of fish of various species and habits were to be found in lakes and rivers as in the sea. Although salmon, trout, shad, herring, alewives, bass, sturgeon, and other species ran up the streams leading into the Atlantic, fishing did not play such a large role in the native economy on the eastern seaboard as it did on the Northwest Coast. There are suggestions that well-defined fishing rights at some of the principal falls and pools were owned by chiefs or by groups, but little more than this can be gained from a perusal of the early records.<sup>51</sup> Some writers record weirs set at strategic places, but the type of ownership of these structures is not always clear. An abundance of shell-fish was found along the shores, and even in the streams, although the fresh-water clam does not appear to have been utilized as extensively in the eastern part of the area as it was in the Ohio drainage.

The wealth of fish was utilized in a variety of ways. “In the Summer these Indian women when Lobsters be in their plenty and prime, they drie them for to keepe for Winter, erecting scaffolds in the hot sun-shine, making fires underneath them, by whose smoake the flies are expelled, till the substance remain hard and drie. In this manner they drie Basse and other fishes without salt, cutting them very thin to dry suddainly, before the flies spoile them or the raine moist them, having a special care to hang them in their smoakie houses, in the night and in dankish weather.”<sup>52</sup> Oysters, and perhaps clams, were also dried for winter use.<sup>53</sup>

At least along the coast of southeastern Massachusetts the great spring run of fish supplied fertilizer for the corn crop. While some writers have argued that this custom was introduced by the settlers, Bradford indicates otherwise. Writing of that first spring when the survivors of a bitter winter

<sup>49</sup> Rosier, 1605, pp. 72–73.

<sup>50</sup> Rowe, 1941.

<sup>51</sup> Hubbard, 1815, p. 30.

<sup>52</sup> Wood, 1634, p. 110.

<sup>53</sup> Josselyn, 1675, pp. 101, 109–110 describes the sea-food of the people about Black Point. There are descriptions in nearly all the early sources, giving not only the various species that were eaten, but various ways of preparing them. Josselyn, incidentally, has given, on pp. 87–88 a recipe for cooking eels that, had one the time and the condiments to prepare it, would suit the most exacting gourmet. Gookin, 1792, p. 150, gives a condensed version of the dietary of the Indians of Massachusetts.

in a strange land turned to the task of raising their own food, he says "Afterwards they (as many as were able) began to plant ther corne, in which servise Squanto stood them in great stead, showing them both ye manner how to set it, and how to dress and tend it. Also he tould them except they got fish & set with it (*in these old grounds*) [italics mine] it would come to nothing, and he showed them yt in ye midle of Aprill they should have store enough come up ye brooke, by which they begane to build, and taught them how to take it, and wher to get other provisions necessary for them . . ."<sup>54</sup> Winslow, writing to a friend in England on December 11, 1621, says "We set the last spring some twenty acres of Indian Corn, and sowed some six acres of barley and pease; and according to the manner of the Indians we manured our ground with herrings, or rather shads . . ."<sup>55</sup> In 1624, Winslow wrote ". . . But whereas it is objected against New England, that corn will not grow except the ground be manured with fish, I answer that where men set with fish, (as with us) it is more easy to do so than to clear the ground and set without some five or six years and begin anew as in Virginia and elsewhere. Not but that in some places, where they cannot be taken with ease in such abundance, the Indians set four years together without, and have as good corn or better than we have that set with them. . . ."<sup>56</sup> Wood also points out that the use of fish for fertilizer increases the yield and permits the land to be "kept in hart the longer: besides, the plenty of fish which they have for little or nothing, is better so used, than cast away; but to argue the goodnessse of the ground, the Indians who are too lazie to catch fish, plant corne eight or ten yeares in one place without it, having very good crops. . . ."<sup>57</sup>

The trait would appear to be restricted in its distribution, and naturally so, for great spring runs of fish do not occur beyond the limits of streams which flow to the sea. Furthermore, it does not appear to have spread beyond the limits of southeastern Massachusetts.

That the northeast was not always as favored as it is now goes without saying. We know only too well that the great mass of Pleistocene ice overrode the area on more than one occasion, destroying forests and forcing surviving elements in the flora to take refuge either on ice-free terrain, or beyond the margins of the ice, perhaps on the continental shelf which was exposed for some distance from the present shore at the time of the ice advance. If we accept current views as summarized by MacClintock<sup>58</sup> the

<sup>54</sup> Bradford, 1648, p. 121.

<sup>55</sup> Winslow, 1621, pp. 230-231.

<sup>56</sup> Winslow, 1624, pp. 370-371.

<sup>57</sup> Wood, 1634, p. 13.

<sup>58</sup> MacClintock, 1937, pp. 119-121.

Wisconsin glaciation was characterized by five glacial advances. The first or Iowan, derived from the combined Cordilleran and Keewatin sheets, deposited the thin stoney drift in Minnesota and Iowa. The second advance, credited to the Labrador sheet and known as the Tazewell, deposited large sheets of drift in Illinois, Indiana, and Ohio. After a pause, during which the Tazewell drift was eroded to some extent, a rejuvenation of the Patrician sheet brought heavy deposits of drift to the states south of the Great Lakes, and to Ontario. This moraine has been traced eastward to Long Island. The fourth advance, known as the Early Mankato left drift in Wisconsin, Michigan and Ontario. The final advance, involving a rejuvenation of the Keewatin ice sheet, and known as Late Mankato, extended into the Dakotas, with a lobe southward to Des Moines, and along the southern borders of Lake Superior and northern Michigan, leaving much of the eastern area free of ice. From the arctic climate of those times, the modern climate has evolved by slow degrees. However, between glacial advances, climate was warm enough for forests to advance into the glaciated areas.

Limnological studies in North America are of recent date as compared with those in Europe. There, knowledge of the manner and rate of ice retreat is fairly detailed, due to the work of de Geer on varves, and the date of the beginning of post-glacial time seems fairly well established. Antevs' study of the retreat of the ice sheets from New England and eastern Canada<sup>59</sup> has shown that approximately the same amount of time was required for the retreat of the Labrador sheet of eastern North America as was consumed during the retreat of the Fennoscandian ice from the Brandenburg moraine, yet there are three gaps in his varve count which remain to be filled. He has recently pointed out that it is impossible to correlate post-glacial climatic fluctuations in New England and the middle west with similar variations in the climate of Scandinavia because of the fact that peat began to form in these regions in America approximately 20,000 years before it began to form in Scandinavia.<sup>60</sup> Furthermore, we have no assurance that once deglaciation began it proceeded at a uniform rate in both areas. Daly,<sup>61</sup> among others, has suggested that at least the latter part of the deglaciation of Scandinavia may have proceeded at a faster rate under the influence of winds blowing off the Gulf Stream. Accordingly, pollen profiles of the two areas are not comparable, since the record in Scandinavia can only cover a part of the time covered by the more southerly American records.

Pollen profiles have been prepared by Sears, Deevy, Auer,<sup>62</sup> Benninghoff,

<sup>59</sup> Antevs, 1922, 1925.

<sup>60</sup> Antevs, 1943.

<sup>61</sup> Daly, 1934, p. 102.

<sup>62</sup> Auer, 1930.

Knox, and others.<sup>63</sup> These seem to show that there have been pulsations of climate in the northeast that are roughly comparable to those in Europe. However, the danger of attempting to correlate these changes with similar ones in Europe has been pointed out frequently. Analysis of pollen from bogs and marshes has shown that there was first a spruce-fir maximum, succeeded by a pine maximum, as the cool climate gradually became warmer and drier; that hemlock-oak forests or, in the midwest, beech-oak forests then became dominant during a moist warm period only to be succeeded by an oak-hickory maximum, interpreted as having occurred during a period of warm, dry climate. From this climate there has been a gradual change to the somewhat cooler and moister climate of the present. Raup has found evidences of the former extension of a warm dry climate into New England and has followed Sears' correlation in dating it to a period of approximately 3300 years ago, suggesting that during this climatic phase agricultural tribes moved to New England from the south and west.<sup>64</sup> This is one of the tentative dates assigned to the Boylston Street Fishweir, with which, unfortunately, no definitive cultural evidence was found.

The grassland formation, which occurs on the western limits of our area, extends westward and northward from prairie openings in the oak-hickory forests of Illinois. Although Sears has a record of conifer pollen from a bog in central Iowa,<sup>65</sup> the soil profiles of this region bespeak a rather long period of evolution under grass.<sup>66</sup> Similarly, a long finger of grassland soils, of chernozem or park type, extends northward to central Alberta and Saskatchewan. In the northern portion of the chernozem distribution there are interspersed islands of podsolic soils which have developed under conifer forests. Patches of grassland, found northward of the Peace River, appear to have succeeded tundra in that region with no forests represented in the sequence.<sup>67</sup> The black soils are now being invaded slowly by groves of aspens, and seem never to have been covered by conifer forest.

Farther north, Raup has found evidence of the damming of the Mackenzie drainage by ice or till, leaving strand lines at an elevation of a thousand feet above the surface of present-day Lake Athabaska. Although the shore

<sup>63</sup> See particularly Deevey, 1939, 1943, 1944; Sears's several works on the subject [His "Archaeology of Environment in Eastern North America," (1932) is the earliest discussion of the results of pollen analysis to appear in an American anthropological publication. Probably it did much to make American anthropologists pollen conscious]. See also Johnson, 1942, in which there is a good bibliography and analysis of this subject to date. Antevs, 1943, has some very worthwhile comments on the matter of correlating similar phases of the climatic cycle in different latitudes of Europe and America.

<sup>64</sup> Raup, 1937.      <sup>65</sup> Sears, 1933.

<sup>66</sup> Finch and Trewartha, 1936, Plate IX; Halliday, 1937, pp. 19-22.

<sup>67</sup> Raup, 1934.

lines of this great glacial lake have not been traced, the topography of the area suggests that the flowage caused by this damming must have covered an immense area. This hypothesis is not invalidated by the likelihood that there has been a post-glacial elevation of the land affecting these ancient strand lines. In this region one is forced to consider not post-glacial, but post-lacustrine time in formulating hypotheses involving the spread of plants and animals over the former lake beds. Raup has suggested that these lakes were not drained until comparatively recently. For evidence that there has been a change of level in historic times, he points to the fact that Mackenzie in 1792 went into the Peace River by canoe by way of Lake Claire and Pine River, a route that is now impossible without carries. Raup also points out that, on the other hand, connection between Lake Claire and the Peace River may have been closed by sedimentation and the shifting of channels. Further evidence that adjustment is still progressing appears in cited conversations or accounts of Indian legends gathered by travelers in the Great Slave Lake region. In addition a map of the eastern end of the lake, made by J. W. Tyrell in 1901, shows a shore line differing from the present one.<sup>68</sup>

Evidence of the comparative recency of the spread of the forests is also cited. He notes that early Russian explorers along the western fringes of the Mackenzie Valley and in the Peace River Valley clearly record as treeless, areas which are now covered with forest. Furthermore, Raup notes that through much of the Mackenzie drainage basin the forest is essentially a young one. Little duff has accumulated, and in places there is no humus at all. He notes three types of forest in the Athabaska region: (1) a type found principally on the great river flood plains, i.e., a dense stand of large spruce, almost pure, with relatively thick undergrowth but with sparse ground flora and a rather thin carpet of mosses; (2) on the better drained glacial soils of the uplands are stands that are not quite so dense, perhaps evolved from a jack pine forest, with a mat of mosses and duff; and (3) on the pre-Cambrian parts of the region, on light sandy soils, is an open park-like forest with practically no undergrowth, having a lichen-heath ground cover.<sup>69</sup> The grasslands of the Peace River appear to have been derived directly from tundra through desiccation. No forest ever covered the area.<sup>70</sup>

As additional evidence of the recency of the invasion of the Mackenzie drainage basin by forest, Raup notes that speciation among vascular plants is not marked, and that there are few endemics. He observes that white spruce forms the bulk of the forest, and that it is accompanied by canoe birch and two species of aspens.

<sup>68</sup> Raup, 1941.

<sup>69</sup> Raup, 1933, 1941.

<sup>70</sup> Raup, 1934.

If the spread of certain species of eastern trees, such as white spruce, balsam fir, and canoe birch up to and into the Mackenzie drainage basin, and the spread of trees characteristic of the cordilleran forests such as lodge pole pine, the balsam fir of the Rockies, and the Alaskan variety of canoe birch up to and into the Mackenzie drainage basin is observed, the conclusion seems inescapable that the forests of this region were derived from eastern and western centers which were separated by the advancing ice. This hypothesis is also borne out by the distribution of vascular plants, which appear to have spread over boreal America from two centers, one in eastern North America, the other in the cordillera and Alaska. The well-known fact that a few western types are found also in regions about the Gulf of St. Lawrence is accounted for by assigning to them a continent-wide distribution in inter-glacial time.<sup>71</sup>

It is apparent from such evidence that we must abandon the concept of a belt of boreal forest advancing and retreating as the southern margin of the glaciers moved southward or retreated to the north. Were such the case there would be a uniform forest, and a general continent-wide spread of vascular plants. As we have seen, the flora of boreal America is not uniform but appears to have been derived from discrete centers of distribution. In the light of this evidence we seem forced at the present to consider the joining of the two parts of the forest as a comparatively recent occurrence. Just how recently this event has taken place cannot yet be determined, but it is a factor to consider in formulating broad and sweeping hypotheses regarding the peopling of the forested portions of North America by forest-dwelling peoples of the Old World.

If these people came before a comparatively recent date, it is probable that they would have come upon expanses of unforested prairie. The semi-open prairie country which extends from the edge of the Canadian Shield, east of the Mackenzie Valley, westward, perhaps to the foot of the mountains, is not yet fully understood. Raup has given some evidence in support of the theory that forest is advancing into the grasslands from the mountains, yet in the south, between the Mackenzie and the Saskatchewan rivers, there is a forested belt which is of apparently respectable age. Here the forest does not display the characteristics of recency noted by Raup in the Mackenzie Valley.

Our migrants then were faced with a decision—should they cling to the edge of the forest, which they knew, or should they leave it for the prairies in pursuit of game? For the answer to this question we shall have to wait

<sup>71</sup> Raup, 1941.

until further studies have been made; combined archaeological, botanical, geological and pedological studies may throw light on the question.

Jenness has noted the occurrence of the grasslands mentioned by Raup<sup>72</sup> and has suggested that the Eskimo extended southward to the southern limits of the tundra. It is Raup's contention that an amelioration of climate may have resulted in an advance of the forest, driving ahead of it the Caribou Eskimo, and permitting the Athabaskans to extend their range into the Mackenzie Valley. While he does not date the invasion of this area in terms of years, it is evident that Jenness's ideas are not too far from Raup's postulated scheme when he makes the suggestions that it could not have occurred much before the beginning of the Christian era. Given such a state of affairs, any *kultukreis* would have been perhaps more difficult than a similar hegira under modern conditions. Until the botanical history and the recent geology of the region is well known, any postulation of the existence of a wide-open corridor in this region had best be approached with due caution. The region may not have been suitable for human occupation.

ROBERT S. PEABODY FOUNDATION,  
ANDOVER, MASSACHUSETTS.

<sup>72</sup> Jenness, 1940.

# A CULTURAL PERSPECTIVE OF NORTH-EASTERN AREA ARCHAEOLOGY

W. C. MCKERN

**A**NY cultural consideration of an area roughly including the northeastern quarter of the United States and adjoining parts of Canada demands an initial statement of purposes justifying the treatment of such an area as a unit. We are confronted by the question: are there cultural factors of major importance which tend to characterize this area, or to make it convenient to treat it as an area? If so, what are these characteristics; and if not, why are the interests of this symposium confined to a consideration of the northeastern area?

I suspect that we have been asked to consider this area for two reasons: (1) it seemed necessary somehow to limit the scope of subject in order to permit a detailed treatment of problems and trends vitally of interest to workers throughout this area; (2) there was precedence in the almost traditional use which ethnologists have made of the closely parallel Woodland area. As a matter of fact, the name "Woodland" has been applied by some archaeologists, not to this area, but to the most widely present culture pattern within this area. As used, however, the term designates culture only, without geographical or ecological connotations.

The fact that there actually was a Woodland culture outside the lurid imaginations of certain students, was demonstrated, satisfactorily to those present, at the recent Woodland Conference held in Chicago. The report of that conference has been published.<sup>1</sup>

The question may be asked: does not the presence and importance of the Woodland Pattern in this northeastern area justify its separate cultural consideration? Here we have a fundamental cultural frame of outstanding importance over a broad belt extending from Maine to the Mississippi, and from the Ohio River well into Canada. Is not this actually a Woodland area? This question must be answered in the negative if consideration is given to the following three important factors.

1. The geographical scope of Woodland-culture distribution is not wholly known. There remains little doubt that the pattern is important deep in the Southeast. Its presence is justifying extensive investigations in Nebraska, and Woodland-like pottery occurs at site after site in Wyoming. Woodland-like manifestations are under investigation in the Southwest. Knowledge

<sup>1</sup> (Woodland Conference) 1943.

of the northwestern extent of its distribution awaits research in central and northwestern Canada. Thus, the area of Woodland distribution promises to be not only too great to suit the prevailing idea, but too vast to serve any culture-area purpose.

2. The northeastern area, whatever its maximum boundaries may have been, was not universally occupied by Woodland-culture bearers at one time level. It represents the gradual spread of an aggregation of fundamental traditions, with all manner of local adjustments and specializations, over a long period of time. It can not be treated as an area independent of temporal considerations, since it would exhibit a different scope and areal shape for each succeeding era.

3. Cultural manifestations essentially related to other patterns, or otherwise distinct from the Woodland Pattern, existed within the area contemporaneously with Woodland, and actually achieved and held dominant position in large subdivisions of the area from time to time.

When these factors of cultural growth and movement in time, and cultural diversity within an area are given adequate consideration, the concept of the Woodland area is reduced to a fleeting picture which can not be defined in terms of space and time, and if defined in terms of space alone, can have no permanency or lasting importance.

If the northeast can not be justified as a special area from a cultural viewpoint in terms of the Woodland Pattern, it seems rather hopeless to search for other cultural factors of sufficient importance to give the area specific cultural significance. A long-time perspective of the northeastern geographical division reveals no widely influential culture manifestation that may be singled out as northeastern either in origin or development, assumed or otherwise. Certain early varieties of culture, such as the Lamoka Focus of New York, are not easily affiliated with other, outside influences, but their importance is only local in place, and restricted in time. The better known, more widely influential manifestations, like the Woodland Pattern, are both in and out of our chosen area. The so-called Hopewellian Phase had an all-time distribution, in so far as it is known, which conforms more specifically to a somewhat delimited Mississippi Valley than to any other geographical division. The Mississippi Pattern represents a late development which had its basic origin in the south, and an all-time distribution affecting practically the entire Mississippi Valley. Neither of these manifestations appears to have extended its influence into New England or easternmost Canada.

We are left without significant factors which might serve to justify treatment of the northeastern area as a unit on cultural grounds. Actually, the

outstanding theme in the long-time picture of this area is one of cultural conflict, change, and kaleidoscopic complexity rather than one of cultural unity. The geographical features of the area are not such as might provide natural boundaries serving to exert an influence to confine inside culture, or to protect its purity from outside contamination. Rather, they serve to encourage widespread trade and travel, north, south, east, and west; and such seems to have been the cultural history of the region. Cultural ideas of northern development were carried into the south, to be reshaped through adjustment to new conditions and carried again to the north, the northeast, or the northwest. Similarly, ideas originally developing in the south were carried into distant northern regions, and later modifications found their way again to the south, or to the east or west. The result was a sporadically changing and progressively increasing cultural complexity which, in the extreme, reflected influences from sources as remotely separated as the Aztecs and the Eskimo.

Not only is the northeastern area not a culture area, but it is my conviction that the usual concept of a culture area, careless of the importance of minority manifestations and without rigid time limitations, can not be accepted by students of archaeology as in any way useful. The time factor is of vital importance to the archaeologist; that which was culturally characteristic in a geographical district at one time in history was generally altered considerably, and in instances entirely replaced by locally new characteristics within the succeeding century or two. Nowhere in North America was this more true than in the Mississippi Valley and Great Lakes geographical areas. Site after site bears the evidence of cultural succession after cultural succession. The use of the culture-area concept in American archaeology must be challenged with the question: "When?"

Incidentally, I am not ready to concede that this is a peculiarly archaeological position. Cultures in America have changed more rapidly in the period of historic European invasion and conquest than in preceding eras. What can the ethnologist say of a Northern Plains culture area without temporal qualifications? The nomadic bison hunters are gone. Remnants of the old culture only remain as threads incorporated into the new pattern which has replaced it. Cultural processes did not stop with the advent of the white man.

As previously illustrated, the other major flaw in the culture-area concept, whether considered as a geographical district with actual boundaries or as a focal center of development and distribution, is the overemphasis which it places upon one of several contemporaneous cultural manifestations. One is selected as more important than the others, and the minority

or relatively simple groups too frequently are given relatively scant attention. The archaeologist knows that in the course of time a minority or simple culture may develop and grow in importance, eventually to dominate over or entirely replace a formerly majority or relatively complex group. Consequently, in long-time perspective, one cultural manifestation deserves equal attention and emphasis with all others.

The tendency to study man and his culture by geographical or even more restricted environmental areas originates, no doubt, in the commendable purpose of subdividing a too vast subject into orderly categories; to bring some order out of initial chaos. As an initial procedure it may be justifiable, so long as the method does not assume importance over the objective and become an end in itself. However, it becomes an obstructive element rather than a useful tool when it leads to cultural overemphasis or serves as an excuse for the false picture of culture static in time and space.

Since we are not dealing with a culture area, whether or not such concepts are justifiable elsewhere, I should like to propose that the northeastern area be employed here purely as a geographical division, arbitrarily selected for purposes of subject limitation, and that cultural problems in this geographical area be considered on a strictly cultural basis. Cultural life within the area so selected may then be described and discussed, as related to both tradition and environment, without the false presumption of environmental possession. Cultural varieties may be defined arbitrarily on a basis of cultural similarity or dissimilarity, where convenient, or treated as the mass customs of historic peoples, where possible, and their actual methods, movements, and interrelationships studied independent of any geographical taboos. This approach should serve to emphasize social sources and relationships, since these subjects require a ruthless disregard of regional fences, and consequently should lead to a consideration of culture as an element which flows out from a source rather than one which is retained within walls. From both an historical and culturally functional angle, however, those problems hinging on social *contacts*, and resulting *inter-cultural influences* are definitely more important than the establishing of lines of differentiation and lists of unique peculiarities.

MILWAUKEE PUBLIC MUSEUM  
MILWAUKEE, WISCONSIN.

# CULTURAL CHANGE AND CONTINUITY IN EASTERN UNITED STATES ARCHAEOLOGY

JAMES B. GRIFFIN

## INTRODUCTION

THE study of American prehistory is not regional, it is continental in scope. Northeastern aboriginal sequences can only be understood adequately in relation to comparable data found throughout North America. Former dominant American anthropological theory as well as modern cultural factors produced a strong tendency toward state and areal isolationism in dealing with American archaeology. This was accentuated in the Mississippi Valley region by an emphasis upon the later, more spectacular, archaeological remains; the nature of the cultural content of the first Americans was formulated by peeling away late ethnological additions in order to determine early widespread primitive traits. This approach produced a number of worthwhile observations. One of these is that the first migrants were in a late Palaeolithic to early Neolithic stage of development. Another is that there is a series of resemblances between eastern South America and eastern North America, and between eastern North America and northeastern Asia. Relatively recent emphasis upon the problems of early man throughout North America has revitalized our interest in, and knowledge of, the first migrants. These investigations have clearly indicated not only the primitive material culture believed to be associated with early man but have emphasized that there are recognizable archaeological units arranged in various chronological positions which antedate by many years the developed, historic, agricultural Indian cultures.

It is difficult for one immersed in regional detail to interpret adequately the significance of the data now available. The great number of archaeological units distributed throughout the country, which are preceramic in their respective areas, invite comparative studies on a broad basis to determine those elements which are held in common and those which characterize local groupings. A rapid survey of many of these groups suggests that while the chronological position may vary from area to area and within the same area, there are enough resemblances between early levels in the west and those in the east to indicate cultural connections which probably should

be interpreted as a common cultural background modified by subsequent regional specializations.<sup>1</sup>

Both before and during the preparation of this paper a number of hypotheses were formulated. These have influenced the interpretations presented. Readers should have these constantly in mind and recognize the limitations inherent in the presentation employed. (1) Early Americans and their culture were derived from pre-Neolithic and Neolithic culture groups in northeastern Asia. (2) Migration and cultural diffusion has continued since the original American Adam and Eve. (3) The development of Neolithic cultures in Eurasia resulted in the dispersal of further migratory groups and concepts to the New World. (4) The entire cultural aggregate, excluding the Mississippi cultures in the eastern United States, can be considered as a development upon a common cultural stream regardless of the specific point of origin for any particular trait or complex. The pre-Mississippi Neo-Indian<sup>2</sup> cultures can be considered as having been derived in part from the widespread Early American Hunters, and, in part from the continuous addition of cultural elements from the Old World or of influences from developing New World culture centers. While specific cultural items or complexes may well have been introduced from the outside into the region now included in the eastern United States, we have little data on which to assert the direction from which much of this material was derived. Origins have been suggested for pottery, mound building, pyramidal substructures and other traits. However, by the time a specific cultural division including such traits became strong enough to be recognized as a unit, it is almost impossible to trace its derivation to any specific source. The employment of an hypothetical migratory group as a means of introducing traits merely postpones the cultural explanation. (5) The major centers of North American archaeological development, the Southwest and the Mississippi Valley, passed through relatively similar cultural stages which were, in the main, remarkably parallel. (6) Cultural ideas and influences have been

<sup>1</sup> See also Haag, 1942a, p. 221.

<sup>2</sup> There is need for terms to represent the major groupings into which native American cultures may be segregated. The terms Paleo-Indian and Neo-Indian are used for this purpose here. Paleo-Indians, sometimes called Early American Hunters, are those who hunted for birds animals, berries or women at an economic stage which more nearly resembles a cultural "paleolithic" than a cultural "neolithic." Neo-Indian is a term given to culture units which either possess, or are assumed to possess, a pottery-making, agricultural economy. It does not imply a *base*, cf. Setzler, 1940, pp. 254-257, from which various cultural divisions were diversified, nor does it have a fixed time for all areas. It is used here as a balance to Paleo-Indian. The need for a term which will include southwestern and eastern groups is becoming increasingly apparent. Cf. also Haury 1943.

operating through time, not only within each of these areas but between them. The present disparity can be interpreted as accentuated through the development of a more settled sedentary life which was forced to accommodate itself to the markedly different environmental factors. Thus the relatively recent overlay has served to obscure the fundamental similarity of the early hunting cultures throughout the continent.

This paper attempts to place cultural aggregates recognized by various students, in their areal, cultural, and chronological context. In so far as possible, site and cultural terms employed by local archaeologists have been utilized and, where possible, their chronological schemes have been employed. They are not however to be held responsible if their data have been incorrectly interpreted and correlated. My views regarding the use of classificatory terms for cultural units have been set forth in another publication,<sup>3</sup> and *no attempt is made in this paper to demonstrate or define cultural groupings*. Successive cultural stages throughout the eastern United States can be erected on the basis of local stratigraphy, the interchange of specific cultural items and the common possession of definite cultural concepts at specific chronological periods. Unfortunately, a considerable body of information on cultural groups and succession in the area is not formally published, but it is known and accepted by the individuals actively engaged in research. Much of this data has been presented at meetings; has appeared in the form of mimeographed statements; or has been published in preliminary reports. My use of unpublished data has, in almost every instance, been preceded by specific permission.<sup>4</sup>

Within the last ten years there has been an unusually large amount of archaeological activity in the region east of the Rockies and this has completely altered the general picture presented by Holmes, Wissler, and Shetrone.<sup>5</sup> More material has been made available for study than in all of the previous years of excavation, and it is natural that the interpretation of the history of the area has changed. We have experienced a shift in our conception of aboriginal culture in the Mississippi Valley. Formerly it was

<sup>3</sup> Griffin, 1943a, pp. 327-342.

<sup>4</sup> I am indebted to a great many archaeologists in the eastern United States, not otherwise mentioned, for their unfailing helpfulness and for many fruitful hours of discussion. While it is perhaps unfair to single out individuals, I feel personally indebted for many stimulating concepts and interpretations gained from Dr. Philip Phillips and James A. Ford. The manuscript of this paper has been read by the following individuals to whom I am obligated for numerous constructive suggestions: John Bennett, Glenn Black, Joseph Caldwell, Henry Collins, Alex Krieger, John McGregor, W. C. McKern, Philip Phillips, George Quimby, Frank Setzler, A. J. Waring, Jr., W. S. Webb and Gordon Willey.

<sup>5</sup> Holmes, 1919, pp. 95-111; Wissler, 1922, pp. 261-272; Shetrone, 1930.

considered a province where there was no stratigraphy, where the archaeological scheme was a static one, divided into culture areas. Now definite stratigraphic sequences are recognized throughout the region. If a culture area exists, it includes almost the whole territory. Minor regional, cultural affiliations and groupings have varied with the passage of time so that those known in any specific locale, in the ethnological present, are not precise indicators of the cultural connections which may have been present during the archaeological past.

### PALEO-INDIAN

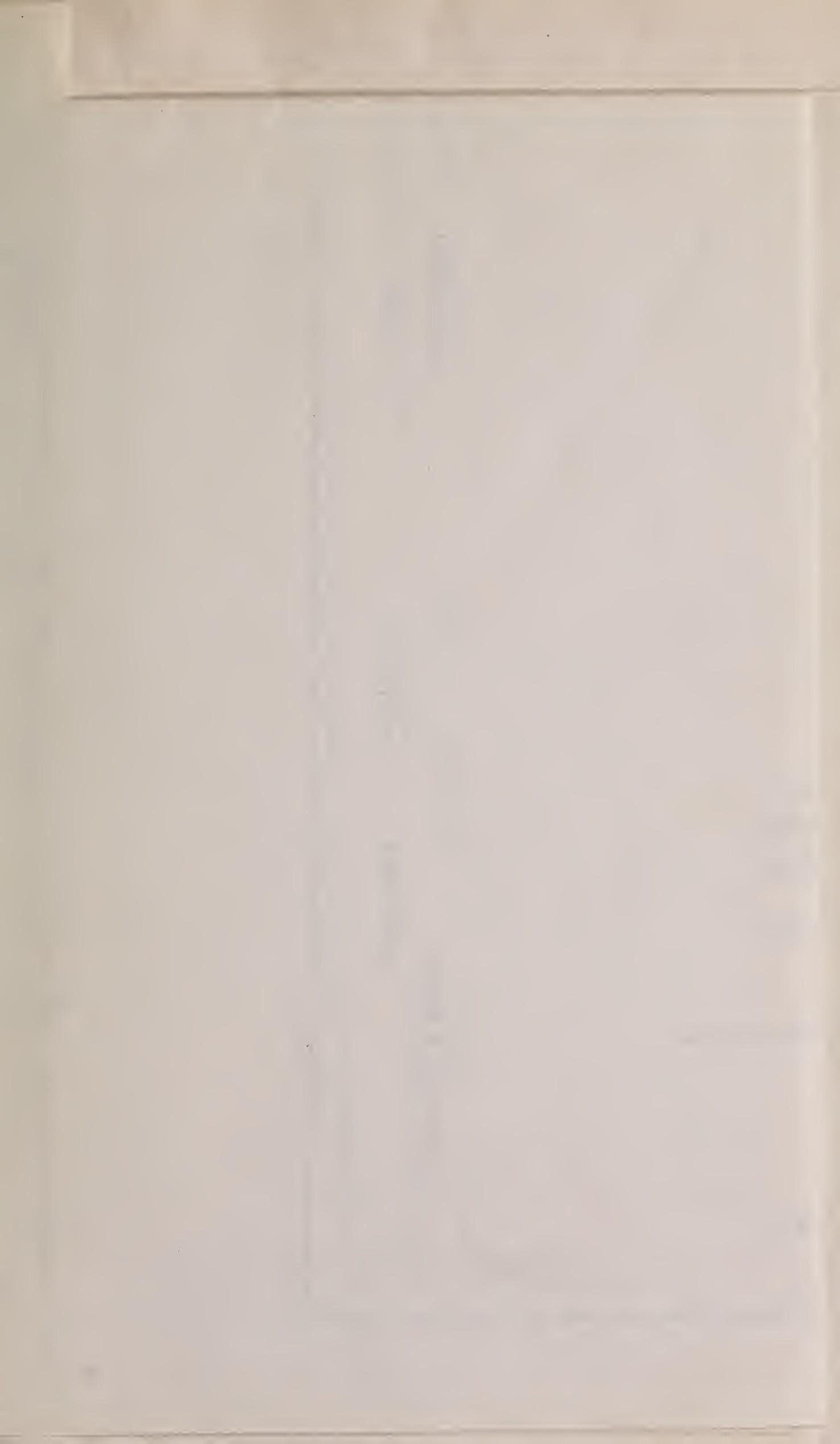
For a long time archaeologists have recognized the presence of pre-ceramic culture groups both in the east and the west, (Fig. 3) but only recently have they begun to consider these sites as manifestations of a widespread cultural period which itself can be further subdivided. While we realize that the division into preceramic and ceramic, into nomadic and sedentary, and into hunting-fishing and agricultural, are all, to some degree, arbitrary classifications, such divisions are useful and are employed in this paper. In recognizing a cultural continuum from the early cultures to the late, it is possible to segregate the former as Paleo-Indians while the later could be grouped under the heading of Neo-Indian. It should be stated again that the use of such terms demands no more recognition of cultural connection

---

### EXPLANATION OF FIGS. 1 AND 2

The two figures are a schematic presentation of the chronological relationships of the several cultural units which are now recognized in the eastern United States. Problems of reproduction necessitated the division of the arrangement into two sections. Fig. 1 includes the northern area and Fig. 2 the southern. For convenience the units have been segregated into classificatory divisions in order to indicate their relative size and their primary affiliations. Inevitable mechanical limitations have oversimplified the cultural complexity and many arbitrary decisions are questionable or even misleading. For example, Weeden Island is recorded as an Aspect of Woodland.

Different styles of lettering indicate broad cultural divisions and various tribal groupings. Various sizes of type suggest the size of the divisions. The arrangement was designed to avoid the appearance of cultural periods which begin and end at a specific moment in time. Regional archaeologists may extend the "time line" of local units and restrict the lines of neighboring units by the use of either black or white ink.



## PALEO-INDIAN

## TRANSITIONAL

## NEO-INDIAN

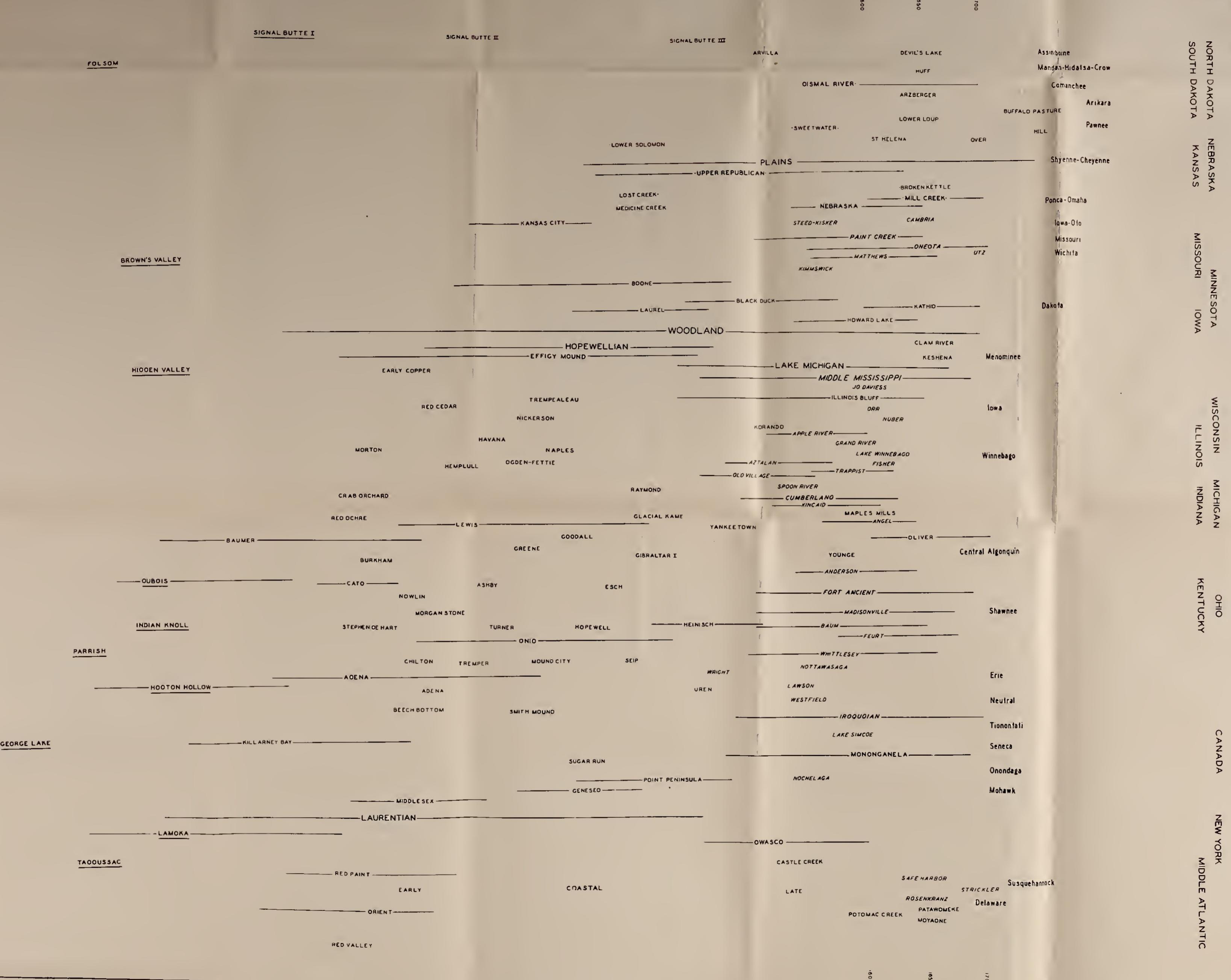


FIG. 1.—Schematic Presentation of Cultural Units in the Northern Part of Eastern United States.



FIG. 3.—Paleo-Indian groups in the United States.

than is stated in the titles. They are not employed in any rigid classificatory sense.

The term Archaic has not been applied to Eastern preceramic cultures for a number of reasons. The artifact assemblage of the Lamoka Focus is not typologically archaic. The word "archaic" has been applied to a Middle American cultural assemblage and there, too, it has been inappropriate. The Lamoka Focus, as such, is a specialized variant and its distinguishing characters are strongly localized. The connotation of "Archaic Pattern" is a distinct mental barrier to the type of cultural growth discussed below. Most of the preceramic units now recognized in the eastern area are relatively late in the preceramic cultural development of the country as a whole. It is apparent from the work of a number of students<sup>6</sup> that there are early cultures on the American continent which precede, not only the settled agricultural groups but also such relatively primitive units as the early Basketmakers of the Southwest, and the early shell mound inhabitants of the east. There is a growing tendency to equate these earliest remains with the pre-Neolithic of northern Eurasia. Actual sites producing typologically demonstrable, old, North American lithic horizons have yet to be identified along the northern reaches of the migration paths, yet no one appears to doubt that the early immigrants followed a general northwest to southeast direction.

In the region in which we are primarily interested there are relatively few sites which produce a culture complex which can be equated, typologically, with the Folsom-Yuma culture. Yet the presence of strong Folsom influences throughout the general area;<sup>7</sup> their recognition at the Parris site; and the occurrence of a Yuma type of flaking at such sites as Perry in northern Alabama<sup>8</sup> allow the suggestion that Folsom-Yuma forms a portion of the cultural ancestry for the eastern, late, hunting cultures. Greenman's George Lake culture<sup>9</sup> is at present regarded as a unique group of considerable geological antiquity with some relationship to elements of Strong's Labrador finds, to some of the Tadoussac specimens and more specifically, as far as my observations are concerned, to the E. D. Pray site in East Killingly, Connecticut.<sup>10</sup> The majority of the shell mound sites of the Mississippi Valley and the Atlantic Coast drainage, and early non-ceramic levels of the Northeast probably do not have any great antiquity

<sup>6</sup> Cf. esp. Harrington, 1933; Howard, 1935; Roberts, 1940, this author calls these units, in the West, Paleo-Indian; Hibben, 1941.

<sup>7</sup> Shetrone, 1936, pp. 254-256; Cotter, 1937, pp. 32-35; Haag, 1942a, pp. 217-219, et seq.

<sup>8</sup> Webb and DeJarnette, 1942, Pl. 101, Fig. 2.

<sup>9</sup> Greenman, 1941, George Lake should have been placed, on Fig. 3 in the same area as Killarney Bay on Fig. 3.      <sup>10</sup> Specimens in the R. S. Peabody Foundation, Andover, Mass



PALEO-INDIAN  
TRANSITIONAL

NEO-INDIAN

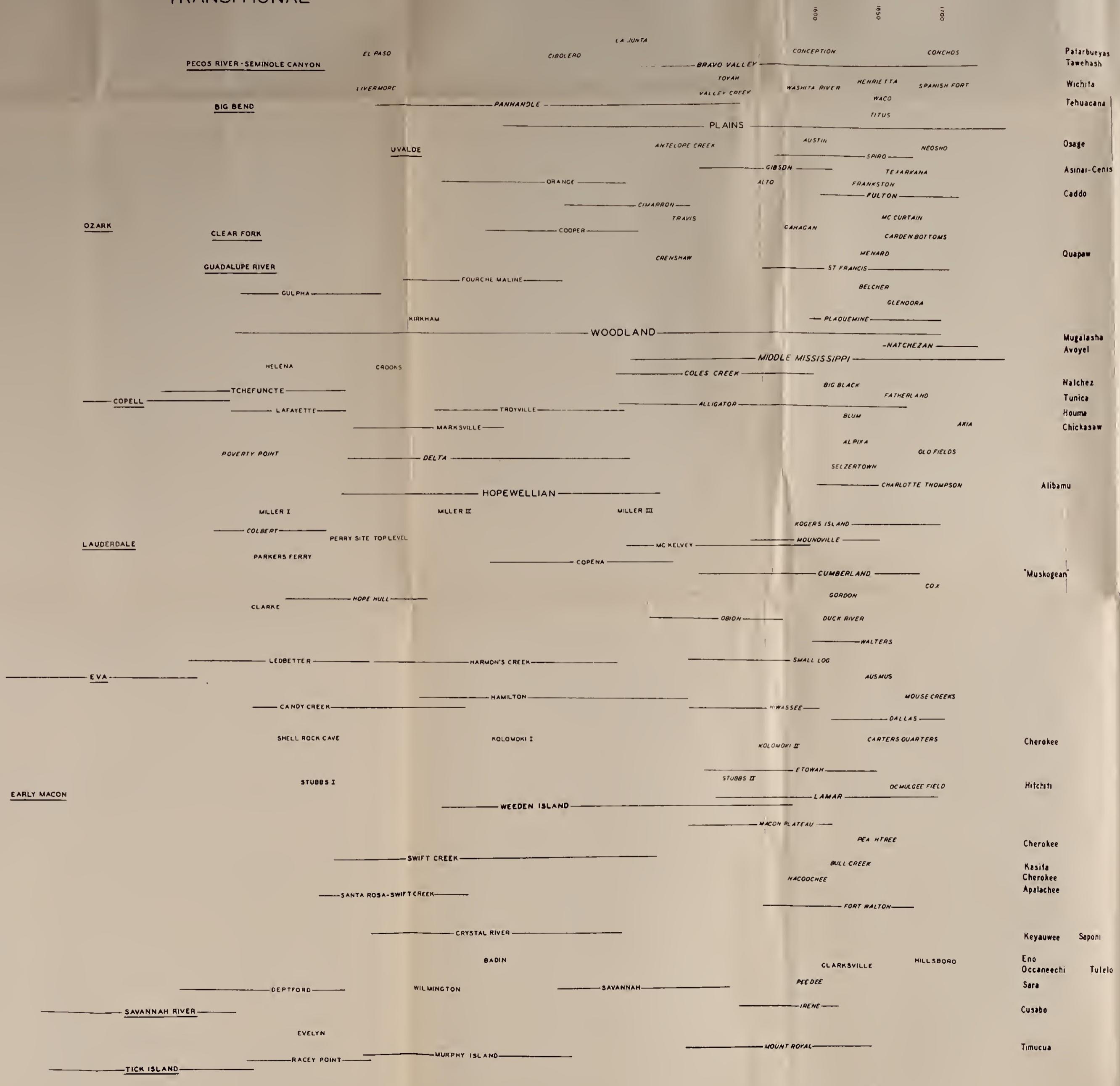


FIG. 2.—Schematic Presentation of Cultural Units in the Southern Part of Eastern United States.

because of the presence of grooved axes, beveled adzes, developed slate artifacts, and other ground and polished stone tools. They also produce a great variety of flint points, including, in some of their later manifestations, small arrow points of stemmed and notched forms.

Ritchie's report on the Lamoka Focus, and excavations in early sites in the Southeast from 1934 to date, recall identifications by Moore, Wyman, Skinner, Harrington,<sup>11</sup> and others, of a preceramic level. Comparative analyses are now beginning to make their appearance and it is evident that many groups have enough traits in common to postulate a cultural connection.<sup>12</sup> The gradual recognition of specific units such as the Lauderdale, Indian Knoll, Savannah River and Lamoka foci will enable the identification and segregation of those distinctive elements which serve as regional and temporal markers, as well as those cultural similarities which will unite the local variants into the larger whole. The Lauderdale Focus, as now defined, is too inclusive and lumps into one small division cultural variations known to be chronologically significant in the Southeast. Furthermore the statements regarding the Lauderdale Focus in the Pickwick report are self-contradictory.<sup>13</sup> As a better understanding of the earlier Laurentian<sup>14</sup> levels is obtained, I believe that they will be found to have even wider relationships than Lamoka and will be of more importance in the developing Woodland cultures of the Northeast. As has been pointed out,<sup>15</sup> it would be a mistake to suppose that these early eastern hunters were limited to the occupation of either shell mounds or caves. Sites in southern Indiana,<sup>16</sup> artifacts from southern Illinois in the collection of I. K. Peithman, of Carbondale, and collections in the Ohio State Museum give every indication that recognition of an even wider distribution of early hunters will follow intelligently directed effort to that end. The eastern continental area, then, has typological and to some degree chronological equivalents to the Southwestern Basketmaker stage.<sup>17</sup> I also believe that they are culturally related.

### THE TRANSITIONAL AND EARLY WOODLAND GROUPS

The addition of pottery marks a significant step in the cultural evolution of the eastern area (Figs. 3 and 4).<sup>18</sup> Throughout most of the area it appears

<sup>11</sup> Moore, 1894, pp. 206-213; Skinner, 1917, p. 58; Harrington, 1920, pp. 103-110, identified as Gulpha, Fig. 1; 1924, pp. 4-17.

<sup>12</sup> Webb and Haag, 1940, pp. 101-109; Fairbanks, 1942; Webb and DeJarnette, 1942, pp. 306-319.      <sup>13</sup> Webb and DeJarnette, 1942; compare p. 23 with pp. 312, 315 and p. 320.

<sup>14</sup> Ritchie, 1940a, p. 37.      <sup>15</sup> Lewis and Kneberg, 1941, p. 37.

<sup>16</sup> Guernsey, 1939; Miller, 1941.      <sup>17</sup> Roberts, 1939, p. 7.

<sup>18</sup> Fig. 3 shows the location of groups with fiber tempered pottery while Fig. 4 locates granular tempered pottery sites.



FIG. 4.—Transitional and early Woodland groups in the United States.

in a simple form and does not accompany any revolutionary change in type of habitat or economy. Whether there were one or more sources is not known, but a number of analogies and resemblances might be noted. The shape and construction of the fiber tempered ware of the Southeast is somewhat similar to that of the fiber tempered bowls of the Southwest, and both, in turn, have a similarity to simple Eskimo bowls of identical textural appearance but which were tempered with feathers or grass.<sup>19</sup> The appearance of basketry impressions on early Basketmaker pottery is paralleled

<sup>19</sup> For the Southeast, see Holmes, 1894; Clafin, 1931, pp. 14-17; Griffin, 1939 and 1945a; for the Southwest cf. Morris, 1927, pp. 138-147; and for the Eskimo, cf. DeLuguna, 1940, pp. 64-65.

by the appearance of basket-marked pottery in Ozark Bluff Dweller sites and in related sites in southwestern Arkansas,<sup>20</sup> at Stalling's Island,<sup>21</sup> in east Tennessee,<sup>22</sup> in New Jersey,<sup>23</sup> in other early levels in the Mississippi Valley,<sup>24</sup> in southwestern Alaska,<sup>25</sup> in Mexico,<sup>26</sup> and in eastern Brazil.

The presence, in the Old Bering Sea culture, of plain and paddled-marked pottery, stemmed points, stemmed slate points, slate ulus, end scrapers, and side scrapers,<sup>27</sup> suggests an affinity with early eastern Woodland cultures. The flint and stone complex does not indicate any great antiquity for Old Bering Sea on American soil. Collins, Jenness,<sup>28</sup> and others are now interpreting Dorset and Old Bering Sea as approximately contemporaneous and dating back to the birth of Christ. Both are more strongly connected to eastern Indian cultures by their flint and stone work than are the later Polar cultures. It has been suggested that both Old Bering Sea and Dorset are derived from a common base. If this be true, the eastern, late hunting groups are probably part of the same cultural stream.

A summary of ceramic resemblances between Alaska and northeastern Asia, recently made by De Laguna, emphasizes the importance of the paddle and stamping on Old Bering Sea pottery.<sup>29</sup> It must be admitted that our knowledge of the archaeology of the northern and northwestern part of the continent is insufficient to explain the cultural problems which face us as the result of the large number of cultural similarities between the New World and the Old. I have been impressed with the realization that not only cord-marked pottery is present in the north Eurasian Neolithic<sup>30</sup> but that practically every element found in Woodland pottery is also present in these Old World groups. There is no need to look to the Eskimo for the origin of eastern North American Indian pottery when coiled, and flat-based vessels, mammiform feet, plain and cord-wrapped paddled, check-and complicated-stamped surfaces, dentate stamped, plain and dentate-rocker-stamped, pinched, line-and-dot-incised, and fabric- and mat-impressed pottery are all found in Asia and North Europe in cultures possessing many other resemblances to those of North America.<sup>31</sup>

<sup>20</sup> Dellinger and Dickinson, 1942, p. 280.

<sup>21</sup> Fairbanks, 1942, p. 224.

<sup>22</sup> Harrington, 1922, pp. 154-158; Griffin, 1938, p. 264.

<sup>23</sup> Cross, 1941, Pl. 26.

<sup>24</sup> Willis, 1941.

<sup>25</sup> Gordon, G. B., 1906, Pl. XXIII, Fig. 6.

<sup>26</sup> Holmes, 1885, pp. 69-72.

<sup>27</sup> Collins, 1937, Pl. 38-42.

<sup>28</sup> Collins, 1940, Fig. 36; Jenness, 1940.

<sup>29</sup> DeLaguna, 1940, pp. 64-72.

<sup>30</sup> McKern, 1937, p. 142.

<sup>31</sup> This interesting thesis is developed in the paper by Spaulding in this volume, pp. 143-167. See also Finn, 1932 to 1936, and Maglione, 1938, on the archaeology of the Hongkong area. Among the other Woodland resemblances is found the "Hopewell" bird on a bronze bell, provisionally dated about 500 B.C., Finn, 1935, p. 249.

## FIBER-TEMPERED POTTERY GROUP

The southeastern Atlantic coast is apparently the dominant center of the earliest ceramic industry in the general southeastern area. In the region between Charleston, South Carolina, or perhaps further north, and the upper reaches of the St. John's River, in Florida,<sup>32</sup> fiber-tempered pottery is the earliest ware known. The earliest, or at least the simplest, variety of this ware, Bilbo Plain, is found in the Savannah River Focus.<sup>33</sup> It has a plain, undecorated surface. In the later stages of its manufacture it is decorated with a variety of relatively simple techniques and designs. This fiber-tempered ware extends to the west and north where it is said to be associated with early Woodland groups in central Georgia.<sup>34</sup> In northern Alabama, along the Tennessee River, particularly in the Wheeler and Pickwick Basins, the Wheeler series<sup>35</sup> displays a number of marked decorative differences, chief of which is the use of the dentate stamp and simple stamping. The primary distribution of the dentate stamp is in the northern early and middle Woodland cultures, and it continues into Iroquoian on the east and Mandan-Crow on the west. The simple stamp is also associated with the earliest Woodland levels in the Southeast. There are some traces of fiber-tempered ware in central Alabama. It has also been recognized near Tupelo, Mississippi by Jennings,<sup>36</sup> and along the upper Yazoo and its tributaries by Griffin and Phillips.<sup>37</sup> In April, 1940, I recognized fiber-tempered pottery among the collections from the central part of the state of Mississippi reposing in the Louisiana State University. Five plain, fiber-tempered sherds were found at the Little Woods site of the Tchefuncte period.<sup>38</sup> The sites in northern Mississippi probably are affiliated with the Lauderdale Focus but it is not yet known whether there is a definable culture group in this area having only fiber-tempered ware. The ware has been found on sites where it is associated with an early Woodland complex of pottery and mounds. Tchefuncte Incised sherds, having primarily a granular, clay-tempered paste, are decorated by means of incised and punctate techniques. This

<sup>32</sup> Griffin, 1943b; I have seen specimens from just west of Melbourne (Griffin 1945a).

<sup>33</sup> Fairbanks, 1942; this sequence is based largely on material found by A. J. Waring Jr. on the Bilbo site.

<sup>34</sup> Kelly, 1938, pp. 30 and 66; for sites in South Carolina see Griffin 1945b.

<sup>35</sup> Griffin, 1939, pp. 157-160; Haag, 1942b. <sup>36</sup> Jennings, 1941, p. 215.

<sup>37</sup> Central Mississippi Valley Archaeological Survey, Season 1941. The survey was a joint one, conducted by James A. Ford, Louisiana State University, James B. Griffin, University of Michigan, and Philip Phillips, Harvard University, in 1940. Griffin and Phillips continued the work in 1941.

<sup>38</sup> Ford and Quimby, 1945, p. 56. This is hardly sufficient evidence to allow one to speak of fiber-tempered pottery as part of the Tchefuncte complex.

latter technique indicates a stylistic similarity to the Stalling's Punctate type. However, this style of decoration is widely distributed in North America and it is also found on simple shapes of vessels similar to those of fiber-tempered ware, in eastern South America.<sup>39</sup> Many elements associated with Woodland pottery in eastern North America, have the same distribution, but whether or not such traits and their ranges are the result of convergence or parallel development remains to be proved. Likewise the striking parallels between the northern Eurasian Neolithic and the Woodland culture and its ancestors in the eastern United States must be adequately explained. Stylistic development from linear punctate, to dentate stamping, and from that to check stamping has been suggested, but it is difficult to demonstrate. The last southeastern manifestation of this linear punctate decorative technique can be seen in the ornate and finely executed Weeden Island punctate styles.

#### EARLY SOUTHERN GRANULAR TEMPERED POTTERY GROUPS

It is suggested that there is a definite genetic connection between the fiber-tempered wares of the Southeast and those types which are now being called the Alexander series.<sup>40</sup> However, this does not imply that it was the sole source. In the Lauderdale and Savannah River foci there is often a highly siliceous feel to the paste of fiber-tempered ware. Sherds of this ware, found by Moore along the St. John's, in the upper levels of the older shell heaps, such as Tick Island and Orange Mound, have decorations that are much more suggestive of the Alexander and Tchefuncte series than they are of the Stallings or Wheeler series.<sup>41</sup> Some of the sherds collected by Wyman along the St. John's at Murphy Island, Old Town, and Silver Spring, may be similarly classified.<sup>42</sup> It is undoubtedly significant, in this regard, that the crudest examples, and the only whole vessel, of Alexander Incised of which I am aware, were found in the cemetery near Carrabelle on the northwest coast of Florida.<sup>43</sup> The apparent absence of the Alexander series along the Georgia Coast is probably to be explained by the presence of the Deptford series. Its absence in central and south Georgia may be a result of the development of the Swift Creek series.<sup>44</sup> In this paper, both Deptford and Swift Creek are considered early, recognizable, southeastern Woodland manifestations.

<sup>39</sup> Serrano, 1933, Fig. 8; see also Lothrop, 1932, p. 154, where it is called "stippled lines."

<sup>40</sup> Sand-tempered ware of Griffin, 1939, and Haag, 1942b.

<sup>41</sup> Moore, 1894, and personal examination of collections in the Peabody Museum, Harvard University.      <sup>42</sup> Wyman, 1868.      <sup>43</sup> Moore, 1918, p. 558.

<sup>44</sup> Kelly, 1938.

When it was first suggested to Ford in March, 1940, that Tchefuncte<sup>45</sup> formed a logical counterpart to Adena, there was not much cultural evidence available save the common possession of burial mounds, tubular pipes, footed vessels, a dominance of stemmed points and relatively simple pottery types. Earlier surmises of the Louisiana archaeologists regarding the intimate association and contemporaneity of the full blown Tchefuncte culture with preceramic levels of the Southeast is now somewhat questionable. The cultural picture of the late occupation at Pecan Island is unfortunately confused at least in my mind and will not be satisfactorily elucidated until the cultural data from each of the various components is presented. Furthermore, it would be preferable to make additional investigations which will follow up the valuable reconnaissance carried on by Collins.<sup>46</sup> The cultural connection between the Copell Component and the shell mounds in northern Alabama might be as close as it is between Copell and Chiggerville. This would depend upon a more adequate analysis and allocation of the various archaeological nonceramic culture units than was provided in the reports on the Wheeler, or even the Pickwick Basin. The cultural deposits in Indian Knoll sites in western Kentucky are much more homogeneous than are deposits in big sites in northern Alabama. Copell, as Collins has demonstrated, offers the best correlation with other Southeastern nonceramic units and also shows many of the traits which continue into the later, more developed sites of the Tchefuncte Aspect. I believe a comparable continuity can be recognized in the Tennessee and Ohio Valleys.

The Tchefuncte mounds and burial practices can be considered a southern expression of an early widespread Woodland practice.<sup>47</sup> There is little reason to separate, chronologically, the majority of the pottery bearing southern Louisiana shell mound sites and the burial mound expressions of the Tchefuncte people. It is possible that the arrival of the burial mound concept from the north—or the south—found the Tchefuncte people in the last stages of the early hunting culture. The dominant Tchefuncte series pottery is granular-tempered and is constructed by coiling, as is the early Woodland pottery. In the use of the linear punctate decoration, Tchefuncte ceramics do show definite relationship to a variety of Stallings Punctate. The occurrence of the Alexander series as an intrusive (?) ware in some of the

<sup>45</sup> Observations on Tchefuncte are based on personal examination of photographs and sherds from Louisiana State University, and a manuscript copy of the Tchefuncte report (Ford and Quimby, 1945).      <sup>46</sup> Collins, 1927 and 1941a.

<sup>47</sup> This is contrary to the speculations of Ford and Quimby who derive tubular pipes, Tchefuncte pottery, as well as burial mounds, from "some early simple cultural stage which has not yet been discovered."

Tchefuncte components serves to differentiate them from the Savannah River Focus on the one hand and the Adena Aspect on the other. The decoration on Mandeville Stamped,<sup>48</sup> a minor, sand tempered type in the Tchefuncte series, resembles the dentate stamping of the Illinois Valley. In fact, the entire, well-developed ceramic complex of Tchefuncte and its mixture of cultural elements from the lower Mississippi Valley, Stallings Island, Florida, and the Alabama area may be the result of a fusion of ceramic concepts derived from various centers, some of which are still unknown.<sup>49</sup> There is little excavated evidence indicating the presence of sub-floor tombs, cremation, and extended burials in Tchefuncte. The majority of interments are flexed or bundled. Bear canines with a central hole for inlay, worked animal jaws, tubular pipes, stemmed points, leaf-shaped blades, solid boatstones, cigar shaped "atlatl weights," plummets, quartz crystals, and soap-stone vessels, indicate a definite connection with other early Woodland pre-Hopewellian complexes.

The distribution and content of the earliest culture groups along the Gulf Coast, both east and west from the mouth of the Mississippi, are but little known at present but there are some hints regarding their affiliations. Sherds suggestive of Tchefuncte Stamped, found to the west, near the Louisiana line, have been mentioned by University of Texas archaeologists.<sup>50</sup> There are definite indications of Tchefuncte affiliations to the east around Mobile Bay and in northwest Florida. Here a chronological connection with Deptford will probably be established. The midden at Carrabelle, excavated by Moore, produced some examples of Alexander Incised, simple stamping, and perhaps cord marking. The decoration on some of the vessels, illustrated by Moore from sites probably belonging to a Santa Rosa-Swift Creek Focus appears closer to the body style of rocker stamping found throughout the early Woodland cultures than to the conventionalized styles of the Hopewellian Phase.<sup>51</sup>

There is a small amount of evidence available from Moore's excavations which indicates that the St. John's area also participated in the development of the early Woodland cultures of the Southeast.<sup>52</sup> The low sand mounds and villages had a fairly high percentage of tetrapod vessels as burial furniture, and one such vessel was decorated with a stamped design

<sup>48</sup> Ford and Quimby, 1945, Pl. 7, Figs. a-d.

<sup>49</sup> The center of the Alexander Series is, as yet, unrecognized.

<sup>50</sup> Personal communication.

<sup>51</sup> Moore, 1902, p. 272; also Santa Rosa Stamped mentioned in Willey and Woodbury, 1942.

<sup>52</sup> Specifically, Tick Island, Silver Springs, Gamble, Murphy Island, Racey Point, Harris, Shields, Monroe and Broward: in Moore, 1894 and 1896a.

reminiscent of Deptford Linear Check Stamp.<sup>53</sup> The possible segregation of cultural material in this area into time periods equivalent to Deptford-Tchefuncte, and Santa Rosa-Swift Creek remains for the future.

The culture complexes associated with the early Woodland sites along the southeastern coast are not too clear.<sup>54</sup> There is a fairly marked unconformity between the Deptford Focus, as now defined, and the succeeding Savannah River Focus. Part of the Deptford complex may be associated with small burial mounds along the coast, as Holder suggested in his discussion of Mound C, Evelyn Plantation.<sup>55</sup> There is some evidence that cord-marked pottery, formerly thought to be limited to the slightly later Wilmington Focus, and fabric impressed sherds are also contemporaneous with the Deptford level. It is reasonable to propose that the more extensive crematory practices described by Moore reached their height during the Deptford-Wilmington occupation. Associated with these were such traits as the use of mica, pearls, red ochre, cut animal jaws, clay platform pipes, bar gorgets, and copper. In succeeding periods, the custom of cremating the dead was supplemented by urn burial as is the case in such a relatively late Lamar Aspect site as that on the north end of Creighton Island.<sup>56</sup>

In central Alabama two early, little known foci attract our attention. The first of these, which can be called the Hope Hull Focus, is equivalent to what R. P. Burke of Montgomery has called the "Orange-Red Pottery People."<sup>57</sup> This focus, as far as now known, is localized in the Montgomery area. It is characterized by relatively small village sites; shell middens; small, conical mounds; flexed burials; undeformed skulls; steatite and "soft stone" tubular pipes; decorated, bone gorgets; expanded-center, plano-convex gorgets; expanded center, biplane gorgets; perforated, water-worn pebbles, crescent-shaped stones; excellent, greenstone celts, used as burial furniture; drinking cups of "conch" shell; long, columella beads; disk-shaped and barrel-shaped shell beads; and marginella beads. The pottery I picked up on the Fish Pond site, in June, 1937, is a sandy ware comparable to that of the Alexander series. This collection and one in the Ceramic Repository from the Mitylene Swamp has unmistakable connections with

<sup>53</sup> Moore, 1896b, Pl. LXXXV, Fig. 1.

<sup>54</sup> I am indebted for prepublication information on the early Woodland sites of the Georgia coast to Mr. Joseph Caldwell.

<sup>55</sup> At the Sixth Southeastern Archaeological Conference, Lexington, 1941. In this interpretation I am at variance with Willey and Waring who believe the mound is late Swift Creek.

<sup>56</sup> Moore, 1897, pp. 28-43.

<sup>57</sup> Described in various numbers of *Arrow Points*, the publication of the Alabama Anthropological Society of Montgomery, cf. etc., Burke 1933.

Adena-Hopewell and with the early mound cultures of the Gulf Coast. A time period close to that of Adena-Tchefuncte is suggested by the combination of linear punctate; single, elongate punctates in zones; solid mammiform feet on fabric-impressed sherds; the added, outer rim-thickening and an out-slanting rim on the jars, bowls, and double vessels; and, a strong use of reddish pigment.<sup>58</sup>

The second cultural group is not as clearly defined but it has been identified tentatively from the collection of John B. Hay from the northeast part of Walker County, Alabama, along the Sipsey River.<sup>59</sup> The cultural material includes pottery of the Alexander and Wheeler series; two-hole gorgets; single apical-hole gorgets or pendants, with upper edge incised; full-grooved axes; chipped, grooved axes or choppers; long, narrow projectile points with stems and notches; broad-bladed points with short, straight stems and square shoulders; plummets; bell pestles; expanded-base, flint drills; and small, conical mounds. This complex, if such it proves to be, might appropriately be called the Parkers Ferry Focus. Similar artifacts with cord-marked and Alexander series pottery from the Huster and Northport Components in Tuscaloosa County, are in the Alabama Museum of Natural History. Excavations by the Alabama Museum at site Ck<sup>o</sup>25,<sup>60</sup> in Clarke County, uncovered material from a small, earth mound with distinct Tchefuncte-Hopewellian affiliations. In the same area copper conjoined tubes have been recovered.<sup>61</sup> They have also been found at Mobile Bay,<sup>62</sup> and the McRae site in Lauderdale County, Mississippi.<sup>63</sup>

Jennings has suggested that in addition to nonceramic sites in northeastern Mississippi, there is a period which he designates Miller I, and which he places among early southern Woodland cultures.<sup>64</sup> Collections made recently in the area around Lambert, Mississippi,<sup>65</sup> justify the recognition, in this area, of sites at least typologically related to Tchefuncte, Miller I, and what I believe to be an as yet unnamed complex in northwestern Alabama. Traits which may form part of a complex apart from the early

<sup>58</sup> This type will be called Laws Red Filmed in the report on the excavations in the Guntersville Basin where it is found as an intrusive type.

<sup>59</sup> Also reported in *Arrow Points* and mentioned in Griffin, 1939, p. 160.

<sup>60</sup> Reported at the Sixth Southeastern Archaeological Conference, Lexington, September, 1941. This has since appeared in print, Wimberly and Tourtelot, 1941. They suggest the site is both Woodland and Hopewellian.      <sup>61</sup> Moore, 1905a, pp. 258-259.

<sup>62</sup> Moore, 1905b, pp. 284-286.

<sup>63</sup> Collins, 1926.

<sup>64</sup> Jennings, 1941, pp. 213-218: it should be noted that the solid boatstones, banner stones, stone gorgets and pendants, reel-shaped stone gorgets, plummets and grooved axes have been described by Brown, 1926, from northeast Mississippi.

<sup>65</sup> Central Mississippi Valley Archaeological Survey, Season 1941.

"shell mound people," Copena, or Moundville include the following; stone, reel-shaped gorgets; plano-convex, expanded-center, bar gorgets, drilled from one side only; biplane, expanded-center gorgets; rectangular, two-hole gorgets; cigar-shaped, bar weights; vessels of steatite and sandstone; tubular pipes, less specialized than either the Adena or Tchefuncte styles; terrapin, rectangular plaques; leaf-shaped blades; and stemmed points. In northwestern Alabama the Alexander series and perhaps the early limestone-tempered wares are presumably associated with these traits. To the east, early limestone-tempered sherds with plain, fabric-impressed, or check-stamped designs, and also sand-tempered, fabric-impressed and check-stamped sherds may be associated with these traits. It is to be hoped that the publication of the Guntersville report will clarify the affiliations of the above elements.<sup>66</sup>

Unfortunately the cultural detail necessary to formulate regional interrelations in the Early Hunting and Transitional periods has not yet been published for the eastern and western Tennessee area, but preliminary data make possible some provisional interpretations.<sup>67</sup> In eastern Tennessee, and particularly in the Watts Bar Basin, material equivalent to the Pickwick Aspect has been recognized but its chronological status is as yet unknown. However, the early Woodland cultures are well represented in village sites, stone mounds and caves.<sup>68</sup> The Round Grave culture appears to belong to this early period, as Harrington suggested.<sup>69</sup> In my opinion, many of the stone and bone artifacts in the village sites and caves indicate continuous cultural growth from the preceding period. The presence of bar gorgets, reel-shaped gorgets of stone, and the predominance of the smaller stemmed and notched types of arrow points, the small mounds, and the types of burial indicate an homology with the early Woodland cultures of which Adena and Tchefuncte are localized specializations. The ceramic complex, characterized by fabric impressed, cord-marked, check-stamped, brushed or simple stamp, and plain surface, and conical and tetrapodal bases further substantiates this cultural assignment.

In the area between the Indian Knoll and Lauderdale foci the University

<sup>66</sup> This assumed occupation has been identified as the Colbert Focus in Fig. 2. The traits are found at the following sites from the Pickwick to Guntersville Basin: Lu<sup>o</sup> 5, Lu<sup>o</sup> 25, Lu<sup>o</sup> 86, Lu<sup>o</sup> 59, Lu<sup>o</sup> 72, Ct<sup>v</sup> 17, La<sup>o</sup> 40, Mg<sup>v</sup> 2, Ma<sup>v</sup> 10, Ms<sup>o</sup> 48, Ms<sup>o</sup> 80, Mo<sup>v</sup> 111, Ja<sup>v</sup> 28, Ja<sup>v</sup> 120, Ja<sup>v</sup> 155, Ja<sup>o</sup> 176.

<sup>67</sup> For prepublication information I am indebted to M. Kneberg and T. M. N. Lewis of the University of Tennessee; see also Lewis and Kneberg, 1941.

<sup>68</sup> Webb, 1938, pp. 158-161; pp. 25-32; 126-128; Griffin, 1938, pp. 255-266.

<sup>69</sup> Harrington, 1922, pp. 276-278.

of Tennessee has obtained comparable material which has been named the Eva Focus. In all probability it will belong to the Pickwick Aspect. Immediately succeeding this nonceramic unit are two successive stages of Woodland, the earliest of which, the Ledbetter Focus, had predominantly fabric-impressed pottery and is equivalent to Baumer, while the succeeding Harmons Creek Focus has a ceramic complex indicating an allocation to the period immediately preceding the appearance of Middle Mississippi.

The early horizons of the area east of the Appalachians, and between the Savannah River and Pennsylvania, are imperfectly known, primarily because of the lack of systematic survey and excavation. On the upper reaches of the Pee Dee River, a series of sites which have been grouped into the Badin Focus belong in an early Woodland period.<sup>70</sup> This is indicated by predominantly stemmed and notched points; bannerstones; expanded-center, bar gorget; and the almost exclusive use of plain, cord-marked pottery. If artifact typology has any chronological significance, the excavations of Fowke in western Virginia,<sup>71</sup> those of the Valentine brothers in the same general area,<sup>72</sup> and the artifacts and ceramics gathered by Bushnell in his surface surveys of eastern Virginia,<sup>73</sup> warrant the supposition that cultural units which will be both culturally and chronologically equivalent to the early Woodland stages of the Mississippi Valley, will eventually be identified in this area.

#### EARLY CERAMIC GROUPS IN THE CENTRAL UNITED STATES

The Central Mississippi Valley Archaeological Survey did not locate any preceramic sites. This may be due to the physiography of the area or to our preoccupation with pottery-producing sites.<sup>74</sup> The name Baytown was chosen to apply to non-Mississippi sites, belonging to various cultural groups and time periods which range from the Tchefuncte-Adena up to the easily recognized Middle Mississippi sites. As classification and analysis of the collections from approximately 400 sites in Arkansas and Mississippi proceeds, this equivalent of Woodland in the Mississippi flood plain will be broken down into more intelligible units. It is now thought that the Poverty Point site of Moore, which has recently been surveyed, belongs in the early part of this transitional period.<sup>75</sup>

<sup>70</sup> Information on North Carolina has been furnished by Joffre Coe.

<sup>71</sup> Fowke, 1894.

<sup>72</sup> Information and field notes furnished by the Valentine Museum, Richmond, Virginia.

<sup>73</sup> Bushnell, 1930-1940.      <sup>74</sup> Season of 1940.

<sup>75</sup> Information furnished by C. H. Webb, now published (Webb, C. H. 1944).

To the west, early ceramic horizons succeeding the more definite hunting periods have been reported from western Arkansas<sup>76</sup> and eastern Oklahoma.<sup>77</sup> In Kansas, and particularly Nebraska, excavation and survey have revealed an early Woodland horizon which is spread out onto the High Plains.<sup>78</sup> In at least some of these sites, corn has already made its appearance.<sup>79</sup> It is probable that in the course of time, chronological sequences will be recognized within the Woodland occupation in the central Missouri Valley, and the period during which definite Hopewellian traits appear will become apparent. The aberrant Sterns Creek<sup>80</sup> might possibly be an early form of Dismal River.

For various reasons the delineation of the early Woodland period in central Illinois is none too clear. There are two major claimants to recognition as representatives of this early Woodland period; neither is defined adequately from the standpoint of a well-rounded complex. Red Ochre<sup>81</sup> is a burial complex of the same, early-to-middle-Woodland configuration distributed from the "Red Paint culture" in Maine, to Arvilla in the west. It may be seen, in more spectacular style, in the developed burial associations of Adena-Tchefuncte and Hopewellian. The exact time relations of these specific manifestations are more difficult to ascertain. A proportion of the small hill-top mounds all along the Illinois and Mississippi valleys, north of the mouth of the Ohio, belong in this time period. Hopewellian intrudes and merges into a continuation of this burial complex so producing one of the varied cultural manifestations of the Illinois Hopewell.<sup>82</sup> The Morton and Black Sand foci of central Illinois will be included in this formative Woodland period. They are directly ancestral to, but not the sole source of, the succeeding Hopewell stage in Illinois. In the St. Louis area a number of early groups are being identified and equated with pre-Hopewellian cultures.<sup>83</sup> In southern Illinois, rock shelter occupation begins in the transitional and early Woodland period; the dominant remains are related to the Lewis and Crab Orchard foci.<sup>84</sup> Agriculture is a part of the culture in these shelters, evidenced by the appearance of corn, but, pipes being absent, there is no evidence of smoking. The Baumer Focus is also found in southwestern Indiana,<sup>85</sup> and fabric-impressed pottery is associated

<sup>76</sup> Dellinger and Dickinson, 1942.

<sup>77</sup> Personal communication, David A. Baerreis and F. E. Clements.

<sup>78</sup> Wedel, 1940, pp. 305-309; Hill and Kivett, 1940.

<sup>79</sup> Hill, A.T., 1941, personal communication, not yet substantiated in print.

<sup>80</sup> Strong, 1935.      <sup>81</sup> Cole and Deuel, 1937; Adams, 1880, p. 369.

<sup>82</sup> Baker, Griffin, Morgan, Neumann and Taylor, 1941.      <sup>83</sup> Adams, 1941.

<sup>84</sup> Peithman, 1939; Bennett, 1944; Cole, 1943.      <sup>85</sup> Black, 1941.

with those sites of the Indian Knoll Focus located in western Kentucky.<sup>86</sup>

The question of time-relationships between cultural units in the central Ohio Valley did not receive much attention between 1887, when Putman<sup>87</sup> recognized the priority and distinctiveness of the Hopewell culture, and 1937, when Lilly<sup>88</sup> reconstructed the situation. During this time emphasis was upon the examination of large mounds or village sites, and a distinct advance was made in the recognition and preliminary definition of three major cultural units.<sup>89</sup> While smaller and less spectacular sites were excavated or surveyed, and in some cases reported,<sup>90</sup> the interpretation of cultural units in the area was strongly colored by the character of a few large sites. Most of the papers written on the archaeology of the area emphasized the distinctiveness of each unit.<sup>91</sup> It was believed that there was no contact between these divisions; they moved in and out of the Ohio area with no regional antecedents or successors.

The presence of artifacts of the Early Hunter period in southern Ohio makes probable the eventual recognition of an expression of this stage in the Ohio area. As Haag has pointed out, types of remains in the cave and rock shelters in Kentucky, in areas adjacent to the shell heaps, are comparable to those in the Indian Knoll Focus. Cave material from southern Ohio both in textile remains and in pottery is analogous to early Woodland remains from Kentucky sites.<sup>92</sup> Of course, both Hopewell and Fort Ancient pottery have been found in other Ohio caves and shelters.<sup>93</sup> In West Virginia, sites of simple Woodland character have been reported by non-professional archaeologists.<sup>94</sup> There is some slight evidence of fabric-impressed pottery in southwestern Ohio,<sup>95</sup> and also in early Woodland sites in Kentucky. The plain and cord-marked surface also found in Baumer is here found more commonly with the Adena cultural group.<sup>96</sup> Sites of these early pottery-using peoples have not been recognized in the till-plain area of Indiana, Ohio, and Michigan.

Real trouble begins with the cultural identification and chronological segregation of various archaeological divisions which are imperfectly known because of the incomplete record inherent in the nature of the sites. One of

<sup>86</sup> Webb and Haag, 1940, Fig. 21. These authors do not connect the pottery with the rest of the site.      <sup>87</sup> Putnam, 1887, pp. 499-500, 557.      <sup>88</sup> Lilly, 1937, pp. 27-36.

<sup>89</sup> Mills, 1917b, p. 284: in this report Adena was first recognized as a cultural unit separate from Hopewell and Fort Ancient.

<sup>90</sup> Shetrone, 1926, p. 70 discusses a Hopewell village site.

<sup>91</sup> Shetrone, 1920; Setzler, 1940.      <sup>92</sup> On display at the Ohio State Museum.

<sup>93</sup> Mills, 1912, Fig. 5-6.

<sup>94</sup> Letters and material on file in the Ceramic Repository, University of Michigan.

<sup>95</sup> Griffin, 1943b, Pl. LXXVI and LXXVII.      <sup>96</sup> Griffin, 1942.

these is the low-lying stone slab mound best represented in the literature by the excavations of Black and Setzler.<sup>97</sup> A divergent but related burial practice was reported at the Chilton site.<sup>98</sup> Burial remains of this general style were widely observed throughout the Ohio Valley as far east as New York, Pennsylvania, and Virginia. This burial custom, and the few artifacts placed with the dead, align the sites with the Woodland culture. Associated artifacts suggest a placement within the Adena-Hopewell period; certainly by Fort Ancient times the practice of building low-lying stone slab burial mounds was dying out. The use of stone in the construction of the smaller Hopewell burial mounds and the use of stone in connection with burial practices at Turner<sup>99</sup> are viewed, in this paper, as related burial customs. Except for the Fort Ancient Component, now attributed to the Hopewellian Phase, the large hill-top "forts" of stone and earth, found in the Ohio Valley, have never been definitely associated with any recognized cultural unit.<sup>100</sup>

Associated with the Glacial Kame culture, first emphasized by Moorehead, and recently described by Cunningham,<sup>101</sup> is another complex of burial practices and artifacts which, while Woodland in character, is difficult to allocate either to a specific cultural unit or a time period. The presence of copper beads, awls, and breastplates, and of platform (?) and tubular pipes, plus the use of Gulf Coast univalves for ornaments, identify this burial complex as part of the general Adena-Hopewell-Vine Valley-Red Paint ceremonial procedure. It is suggested that it belongs chronologically somewhere during the Hopewellian period and prior to the development of Iroquois, Fort Ancient and Oneota.

Mills' final published interpretation was that the Adena culture was an early stage of Hopewell. Shetrone interpreted the data as indicating a more divergent connection and this latter view has been followed by some students. Greenman's<sup>102</sup> analysis of the sites he called Adena expressed the strong cultural connection between Hopewell and Adena and most of the recent interpretations have adopted this point of view. Excavations in Indiana, Kentucky, and Ohio have provided the basis for a reorientation of our concept of Adena. Black, in Indiana,<sup>103</sup> and subsequent excavations by Kentucky archaeologists have modified the idea that Adena mounds are necessarily simpler in construction than all Hopewell mounds. Morgan's excavation of two Adena mounds, in Ohio, has re-emphasized the general

<sup>97</sup> Black, 1934, pp. 231-243; Setzler, 1930, pp. 500-508.

<sup>98</sup> Funkhouser and Webb, 1937.

<sup>99</sup> Willoughby and Hooton, 1922.

<sup>100</sup> Griffin, 1943a, pp. 216-222.

<sup>101</sup> Cunningham, n.d.

<sup>102</sup> Greenman, 1932.

<sup>103</sup> Black, 1936.

Woodland character of the simple Adena structures and brought to light Adena artifacts which indicate a strong cultural connection with Hopewell.<sup>104</sup> Webb's analyses of Adena sites in Kentucky<sup>105</sup> have not only pointed out many analogies with Hopewell but have also served to indicate that regardless of mound complexity, or burial practices, or the common possession of identical or similar artifacts, there is a complex of traits which can be identified as Adena, and which is distinct from Hopewell. In recent years I have emphasized the interpretation that Adena, at least in the Ohio-Indiana area, is earlier than Hopewell. This interpretation has been also adopted by some, although by no means all, students.

Adena has been considered as earlier than Hopewell because of its simpler mound construction; a relative scarcity of artifacts; the small amount and simplicity of its pottery; the similarity of mortuary customs and artifacts to those found among culture groups known to be early in other areas; and, because such a view appeared as a logical interpretation of aboriginal history in the Ohio area. Ohio Hopewellian pottery can be viewed as an elaboration of the basic Woodland ceramics of Adena, plus many exotic additions which do not appear in the Adena complex. Many Hopewell burial traits and artifacts can be viewed as elaborations of ideas which are present in Adena. It is a matter of record that Hopewell sites have not been identified in Kentucky, save for a narrow fringe along the Ohio river, west of Portsmouth. A possible explanation of this may be seen in the size and complexity of some of the Kentucky Adena sites. Adena may have persisted in that area into the Hopewell period. Sites suggestive of Adena have been identified down the Ohio as far as Clark and Pike<sup>106</sup> counties in Indiana. In central Indiana and Illinois, the sites thought to be equivalent in time have more Woodland characteristics. Woodland traits of sites associated with Hopewell artifacts can be derived from this stage. In western Kentucky small Woodland sites showing some Hopewellian characteristics have been excavated.<sup>107</sup> The late Baumer and early Lewis sites of southern Illinois and southwestern Indiana<sup>108</sup> represent the transition into the Hopewellian period; they lack, however, numerical dominance of Hopewell traits. There is remarkably little Adena in this area.

The recent excavation of Adena sites in the Big Sandy drainage of eastern

<sup>104</sup> Personal communication.      <sup>105</sup> Webb, 1940, 1941 a and b.

<sup>106</sup> Griffin, 1942, p. 351; Black, 1941; also personal communication.

<sup>107</sup> The Ashby Site, Muhlenberg County, Kentucky. Unpublished Ms. University of Kentucky Museum of Anthropology.

<sup>108</sup> The site mentioned by Black, 1941, near Coe, has connections with the Indian Knoll Focus, Baumer, and Adena.

Kentucky<sup>109</sup> has served to re-emphasize the existence of this Woodland division there. Similar material had previously been reported by Thomas in the Kanawha Valley. That Adena in this area continued on into the Hopewell period is suggested by the presence of copper reel-shaped gorgets<sup>110</sup> and platform pipes.

The earliest pottery horizon in the Manitoulin area, Killarney Bay, is dated about 500 A.D. by its association with water-laid deposits of lake beaches. This pottery is Woodland in type with predominantly plain surface and with notched lips, and dentate stamping, some of which is a northern style spread from Minnesota to the Atlantic. It suggests Crooks Stamped. Associated with this level are stemmed points resembling Adena specimens, and double-pointed, medium-sized, leaf-shaped blades.<sup>111</sup>

#### EARLY GROUPS IN THE NORTHERN MISSISSIPPI VALLEY

Wisconsin, Minnesota, northern Iowa and Illinois, and eastern Dakota form an intimately connected archaeological area. A satisfactory synthesis is most difficult because of many factors. Artifacts of the type known to be associated with Early Hunter levels in other areas have been found in this region<sup>112</sup> but no sites disclosing a culture complex have yet been excavated. In recent years, emphasis has rightly been placed on careful and accurate delineation of the culture content of components. This will result in more accurate estimates of the processes of cultural change when the chronological development is recognized. Some definitely known time indicators are found; other sequential schemes are inferences based on the existence of similar types in known stages in contiguous areas; some temporal assignments are simply hypotheses of a very tenuous nature.

McKern's preliminary analysis indicates a fundamental homogeneity of the Woodland manifestations in Wisconsin while the number of sites; the enormous amount of material, and the variation promise an eventual chronological story. The presence of a considerable number of polished stone ceremonials in Wisconsin, their absence from historic and proto-historic sites and their known occurrence in early to middle Woodland sites in other areas makes it likely that they will be accorded similar placement in Wisconsin. McKern has intimated in conversations that there is some evidence to attribute to a relatively early period mound groups which are dominantly conical but which include a few linear mounds. Association of

<sup>109</sup> Haag, personal communication, now published in Webb, W. S., 1942.

<sup>110</sup> Thomas, 1894, pp. 267-268.

<sup>111</sup> Greenman, personal communication; Greenman and Stanley, 1941.

<sup>112</sup> Byers, 1942.

Hopewellian with early mound groups in northwestern Illinois has been demonstrated.<sup>113</sup> A recent recapitulation of the occurrence of red ochre with Wisconsin burials indicates, on the one hand, that due to the presence of certain types of artifacts some of these can probably be assigned to early Woodland. On the other hand, one burial, lacking distinctive, early implements, was associated with glass beads.<sup>114</sup>

#### SUMMARY OF TRANSITIONAL AND EARLY WOODLAND GROUPS

In the eastern United States regional authorities have recognized various degrees of relationship between the nonceramic and early ceramic periods. The several analyses imply that the change from one period to the other was gradual and it was carried out as much by the diffusion of concepts as by actual movement of peoples. Such an implication has some measure of validity regardless of the origin, be it single or multiple, of pottery, mound building, the use of large numbers of polished ceremonials, the emphasis on smaller projectile points, the use of Lake Superior or drift copper, and a more sedentary type of life. Actual migration is difficult to trace unless we have distributions of specific types of artifacts found at a series of specific sites. In addition there should be available some knowledge of the physical type associated with the archaeological remains. Finally, it is essential to know the precise chronological position of the cultural and racial factors.

In the Transitional and Early Woodland period there almost certainly were movements of people, but they have not yet been recognized. In some areas, particular traits almost certainly appeared at an earlier date than they did in other areas. For example, the tubular pipe and its brother, the shaman's tube are apparently earlier than their presence in Adena or Tchefuncte cultures suggests. They are distributed widely over the continent and there is also a major center in the New York-New England area. Here again, it cannot be repeated too often that our knowledge does not permit us to favor any particular locale or favorite cultural group as the *fons et origo* of the culture content belonging to a specific stage or to generalized cultural groups. Some cultural material can be clearly allocated to a particular region either because of its numerical predominance in that area or because the raw material is only found at a particular place. In these early cultures, artifacts exhibiting such characteristics are relatively few and it is not until the development of Hopewellian and Middle Mississippi that any extended use can be made of these guides to cultural connection.

<sup>113</sup> Bennett, 1943.

<sup>114</sup> Brown, 1940.

### THE HOPEWELLIAN AND MIDDLE WOODLAND GROUPS

The period during which corn was introduced into the Mississippi Valley and the direction from which it came are unsolved problems. It is a significant fact that corn came into the Anasazi cultures before the development of ceramics; that it was well developed as early as 200 A.D.<sup>115</sup> In Cave Du Pont,<sup>116</sup> smoking was also a part of the culture complex. Corn is said to have been present before the ceramic levels were deposited in the Ozark Bluff shelters<sup>117</sup> but its position in respect to cultural development in the Kentucky shelters is far from clear.<sup>118</sup> Corn is known from Woodland sites in Nebraska. Climatic conditions throughout the general eastern area are not favorable to the preservation of botanical remains. It is not until the Mississippi period that we have extensive evidence, in the open sites, of the use of corn. This is particularly true of the lower Mississippi Valley and the Southeast. However, a considerable period of adaptation must have been necessary to allow the development of strains suited to growing conditions near the Laurentian Uplands and in the northern Missouri Valley. It has been pointed out<sup>119</sup> that agriculture was not practiced in northeastern and north-central Mexico at the time of the conquest.<sup>120</sup> It remains to be seen whether archaeology in this region will bring to light a prehistoric agricultural economy which may have been the source from which corn was introduced into the Southeast and the Plains. Certainly the Southwest offers archaeological evidence locating corn closer to the western Mississippi Valley than does any other area. Corn is found there early enough to permit its spread eastward into the Ozark area in a cultural context comparable to the Basketmaker.

The outstanding feature of the Middle Woodland period is the development and dissemination of Hopewellian culture (Fig. 5). Twenty years ago there was little doubt in the minds of many that southern Ohio was the culture center from which influences were sent forth to less favored regions.<sup>121</sup> Now, however, a re-analysis of Hopewellian is in full sway and that opinion has been profoundly modified. A number of major centers have become

<sup>115</sup> Stallings, 1941. Dr. G. N. Collins of the Bureau of Plant Industry said of this corn: "It is a most interesting collection. The larger specimens, one of which is 19 cm. long and 4 cm. in diameter, are the finest prehistoric ears I have seen," in Nusbaum 1922, p. 67.

<sup>116</sup> Nusbaum, 1922, pp. 132-137. <sup>117</sup> Harrington, 1924.

<sup>118</sup> Compare Jones, 1936 and the popularized statement of Wissler, 1940, p. 22, or the more recent one of Carter (1945). <sup>119</sup> Kroeber, 1939, p. 121.

<sup>120</sup> For a recent statement regarding culture spread from Mexico to the Mississippi Valley across Texas, see Krieger, n.d.

<sup>121</sup> This idea was preserved in Willoughby, 1935, p. 306.

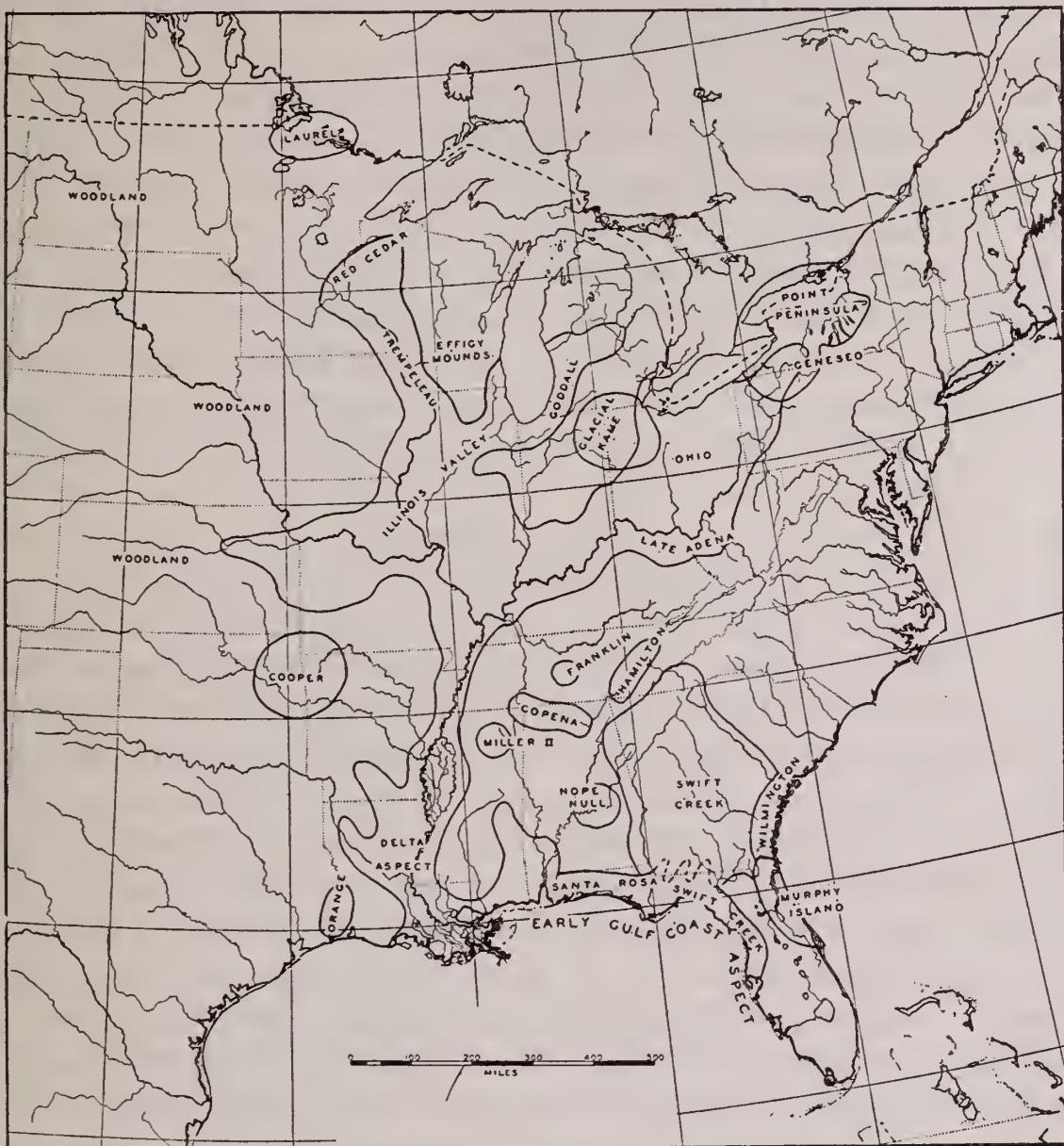


FIG. 5.—Hopewell and middle Woodland groups in the United States.

discernible. Each of these is characterized by regional peculiarities in the form of locally specialized traits especially artifacts connected with ceremonial and religious practice. Presumably these local peculiarities reflect the earlier culture of each area preceding the efflorescence of Hopewell. It is probable that these major centers correspond, in part at least, to tribal groupings. First of all is the best known center, the Ohio Aspect.<sup>122</sup> Second, is the Illinois Valley center, the strength and individuality of which was clearly apparent to Morgan and myself as early as the summer of 1935,

<sup>122</sup> Indianapolis Archaeological Conference, Culture Classification Chart. The Aspect was first characterized by Shetrone and Greenman; a provocative summary is given in Setzler, 1940.

when we first studied the University of Illinois collections. This has recently been pointed out in print,<sup>123</sup> but the entire ramifications and the significance of this second major center are still imperfectly understood. The question of the cultural allocation of northern Hopewellian sites has been a vexing one for some time. There is now in use the term Elemental Aspect.<sup>122</sup> This has the unfortunate connotation of representing a prior stage of Hopewell and it should be abandoned. Sites belonging in the Elemental Aspect, such as those included in the Goodall Focus,<sup>124</sup> usually have a minor number of artifacts which are purely Hopewell in character. However the quality and quantity of these artifacts lacks the "high church" flavor characteristic of major sites in Ohio, Illinois and Wisconsin. These identical artifacts, many of which were almost certainly made in the Ohio center, indicate contemporaneity for somewhat disparate culture units. It is suggested that the term Ogden-Fettie Focus be employed for the specifically Hopewellian, Illinois Valley sites.<sup>125</sup> A third center is the Trempealeau Focus in western Wisconsin.<sup>126</sup> The term Nickerson Focus has recently been applied to sites located in northwestern Illinois and eastern Iowa which are intermediate between Trempealeau and Ogden-Fettie.<sup>127</sup> The fourth center is the Kansas City Focus.<sup>128</sup> Copena, as a focus, has been described in the northern Alabama area, and represents a fifth Hopewellian center. The Marksville and Troyville foci<sup>129</sup> together constitute a cultural unit distinctive of, and limited to, the lower valley. I propose that the name Delta Aspect be used to designate this material. On the Gulf Coast, local specializations of which Santa Rosa appears to be one, could be called the Santa Rosa-Swift Creek Focus.

While the terminal date for Hopewellian is near that already proposed in Moorehead,<sup>130</sup> Lilly,<sup>131</sup> and Setzler,<sup>132</sup> the two latter authors have almost certainly asked for too long a period of development. Two or three hundred years at most would account for the crystallization of cultural ideas which are called Hopewellian. The small, usually limestone tempered, ceremonial vessels, formerly called typical Hopewell, can, in my estimation, be considered the product of one generation.<sup>133</sup>

It is important to note that in the majority of the Hopewellian centers,

<sup>123</sup> Baker, 1941; Griffin, 1941a.

<sup>124</sup> Quimby, 1941.

<sup>125</sup> Cole and Deuel, 1937, p. 19.

<sup>126</sup> Indianapolis Conference.

<sup>127</sup> Bennett, 1945, p. 121.

<sup>128</sup> Wedel, 1940, Fig. 22; Wedel, 1943.

<sup>129</sup> Quimby, 1941, p. 146.

<sup>130</sup> Moorehead, 1922a, p. 175.

<sup>131</sup> Lilly, 1937, pp. 28-29.

<sup>132</sup> Setzler, 1940, p. 265.

<sup>133</sup> Ford and Willey, 1941, allow 300-400 years for the diffusion of the ceramic style from Marksville to the northern sites.

Woodland characteristics form a significant proportion of the total traits. It follows from this that the early Woodland cultures preceded Hopewellian and were the source of many of the basic similarities found throughout the range of Hopewellian. The more esoteric material culture and more complex social structure characteristic of the later culture were superimposed upon these early Woodland cultures. Eventually the regional manifestations may be accounted for by the determination of specific group migration as Ritchie and others have already suggested.<sup>134</sup> However, until the pre-existing culture content throughout the Mississippi drainage is more perfectly appreciated, and until we have specific information regarding the physical type associated with Hopewellian, particularly in the south, these interpretations are hypotheses and not conclusions.

#### SOUTHERN AND WESTERN HOPEWELLIAN GROUPS

In the Florida peninsula, mid-way down the east coast, the Turkey River cache<sup>135</sup> can be compared with what is, as far as I know, the earliest printed reference to artifacts, from the Cincinnati group, that are now called Hopewell.<sup>136</sup> Some of the sand mounds in the northeastern portion of the state are culturally connected to Hopewellian; some were contemporary, and others continued into the succeeding early Weeden Island, although the St. John's area retained an individuality of its own. This Hopewellian connection was cited by Shetrone, and again by Greenman.<sup>137</sup> How much earlier or later than identical forms from Wisconsin, Illinois, Michigan, Ohio, Tennessee, Mississippi and Alabama was the conjoined tube from the Murphy Island site? As has been mentioned by Greenman, Willoughby was among the first to suggest the cultural meaning of these identical artifacts, and he was supported in this by Putnam.<sup>138</sup> The widely-spread Hopewellian copper artifacts were almost certainly made in the north, probably in Ohio, and were distributed to southeastern centers.

Some of the early complicated-stamped designs of the Southeast and some of the incised patterns of Hopewellian are foreshadowed by incised designs of Tick Island pottery, and perhaps the later Alexander series.<sup>139</sup> Cross-fertilization in the general Hopewellian period and later can be seen in the use of the concentric triangle and square which is incised and sometimes bisected on Hopewellian vessels in Louisiana, Iowa, Illinois, Indiana and

<sup>134</sup> Ritchie, 1938a, pp. 39-40; Setzler, 1940, p. 263; Ford and Willey, 1940, pp. 141-143; Wedel, 1943, p. 218.      <sup>135</sup> Moore, 1899.      <sup>136</sup> Barton, 1799.

<sup>137</sup> Shetrone, 1930, p. 456 and 461; Greenman, 1938.

<sup>138</sup> In Moore, 1907a, p. 422.

<sup>139</sup> See also Holmes, 1903, p. 122.

Kentucky.<sup>140</sup> These designs are stamped on Swift Creek and related wares of the Southeast.<sup>141</sup> Certain of the early, stamped styles of south Georgia and north Florida suggest the Naples Ovoid and related stamped designs of the Illinois Valley because they possess strongly marked, complex units.<sup>142</sup> Holmes also suggested that the southern Appalachian stamped ware was connected with the cord-wrapped paddle and with fabric impressions. He suggested, in addition, that the use of the stamp indicated a connection with the Caribbean area.<sup>143</sup>

If the promising beginnings of chronology on the Florida Gulf Coast<sup>144</sup> can be continued, we will eventually be able to segregate the various cultural elements which mixed with the local development, and perhaps to determine their place of origin. There are at least as many resemblances, if not more, between Ohio Hopewell and the Santa Rosa-Swift Creek Focus as there are between Hopewell and the Delta Aspect, or between the latter and Santa Rosa-Crystal River.<sup>145</sup> In my opinion, the development and dissemination of the Weeden Island style, which succeeded the Hopewellian period, probably took place in Florida and moved from there into the lower Mississippi Valley rather than the reverse.<sup>146</sup> Moore obtained one platform pipe, and one of steatite from west coast sites.<sup>147</sup> A clay pipe(?) similar to these in shape was found on a St. John's River site which is probably later than Hopewell.<sup>148</sup> Sites suggesting the presence of Hopewell along the Gulf Coast to the west have already been mentioned.

Since the preliminary work on the Marksville Focus was done, concepts regarding it have changed somewhat. At first it was deemed sufficient to point out that this area must also be considered when speaking of the distribution of Hopewellian traits.<sup>149</sup> Now, however, some archaeologists apparently believe that Hopewell in the north is derived from, and can be

<sup>140</sup> Setzler, 1933, Pl. 3c; Ford and Willey, 1940, Fig. 32d and 35; Holmes, 1903, Pl. CLXXIa; Baker, Griffin, Morgan, Neumann and Taylor, 1941, Pl. 50, Fig. 2; Setzler, 1930, p. 477 and Pl. 14; Haag, 1941.

<sup>141</sup> Caldwell and McCann, 1941, Fig. 18.

<sup>142</sup> Compare such examples as Moore, 1902, Fig. 97 and 119, 141, 169, 203 with the stamped ware in Illinois in Holmes, 1903, Cole and Deuel, 1937, Baker, 1941: also Holmes, 1903, p. 188.      <sup>143</sup> Holmes, 1903, p. 123, 135.

<sup>144</sup> Willey and Woodbury, 1942.

<sup>145</sup> Willey has proposed the name Gulf Coast Aspect to include the Santa Rosa-Swift Creek, Weeden Island and Crystal River foci. Letter, 5/27/43.

<sup>146</sup> For a recent admirable statement of this problem see Willey 1945.

<sup>147</sup> Moore, 1902, Fig. 13; p. 271.

<sup>148</sup> Moore, 1896a, Pl. LXXV, 1. The pipe is called, "Curious vessel of earthenware."

<sup>149</sup> Setzler, 1933, p. 21.

explained only by, an earlier Marksville development in the lower Mississippi Valley.<sup>150</sup>

The complicated stamped sherds at the Seip mound look more like specimens from the northwest coast and northern St. John's area of Florida because of their high sand content and black color. They do not look like sherds from central Georgia or northern Alabama. The check-stamp in various Ohio sites appears to be derived from the Florida area by way of the Appalachians. The T-shaped lip found in northern Hopewell has analogies in Florida. In the Ohio Aspect are barracuda and spade-fish ornaments, shark's-tooth pendants and tortoise shell ornaments of a size which preclude a land turtle origin. The great numbers of *Busycon*, *Cassis* and other tropical gastropods used for dippers, beads and plummets leads me to believe that there was a strong trade connection, presumably along the west side of the Appalachians, between sites in Ohio and Illinois in the north, and the Florida area in the south. The high fresh water content of the Gulf west from Pensacola past the Mississippi and the scarcity of large marine gastropods in that area does not suggest that this region, in which the Delta Aspect material is common, could have been the source of supply for Hopewellian peoples or that the late Middle Mississippi groups received their marine shells from the Louisiana area. The incised or engraved bone artifacts of the Ohio Aspect indicates a connection with the art style of Weeden Island pottery. There are some double vessels in Ohio like some rare Florida specimens. In Florida, I assume that the conjoined tube, copper beads, copper breastplates, copper and silver earspools of Hopewellian type are directly derived from the north and probably came from the Ohio Aspect. There are both clay and stone platform pipes on the northwest coast. Other resemblances between Florida and northern Hopewellian are the hand design, imitation projectile points in mica, stone imitation carnivore teeth, ceremonial destruction of artifacts, quartz crystals, special clay for burial area, cremated burials, cut wolf and bear jaws, and the frequency of footed vessels. The recent identification of Tchefuncte has provided a needed and convenient ancestor for many of the cultural elements found in the Delta Aspect. While there are numerous and significant cultural relations between Tchefuncte and Marksville, as there are between other early Woodland groups and Hopewell, there seems now to be a definite series of traits associated with the Delta Aspect which can best be explained as the result of culture contact and contemporaneity between it and the major northern centers.

<sup>150</sup> Ford and Willey, 1940, pp. 141-142. Note that much the same evidence is used to obtain a different interpretation than is presented in this report.

The closest resemblance to the more specialized burial features of Marksville are to be found in Adena and Hopewell throughout the north. They are not present in Tchefuncte. We have only one Marksville site, a burial mound, which has been fully reported and the present interpretation of the Marksville Focus suffers from the lack of comparative data. This applies not only to the determination of its relationship to Hopewell in the north, but also in placing it properly in the culture sequence of the lower valley. Marksville sites, throughout their known distribution are relatively small, the mounds are small to medium-sized domes or cones.<sup>151</sup> Comparable sites in the northern Delta area<sup>152</sup> and in northeastern Mississippi are structurally similar.<sup>153</sup> In some cases, the mounds are immediately contiguous to a village site, and in others, are set apart from the dwellings. Some Delta Aspect sites have had later, Coles Creek and Plaquemine, occupations and the earthworks associated with these later cultures have, I believe, mistakenly been attributed to Marksville-Troyville. If my interpretation of Walker's report is correct, the finding of Coles Creek pottery in the fill of the Great Mound, in the village site, and in the embankments at Troyville—with Troyville Focus pottery concentrated underneath the big mound—does not suggest that the Middle Mississippi village arrangement is part of the Troyville Focus.<sup>154</sup>

The attempt to prove an earlier time period for the Crooks site and the Marksville Focus rests on the manner in which certain comparable traits are interpreted and the length of time it took identical traits to spread.<sup>155</sup> The dominant pottery at some sites of the Delta Aspect is a plain ware, probably derived from Tchefuncte Plain, while highly decorated vessels are in a minority of about 1 to 9. These latter are usually the same size and shape as decorated vessels in the north and, indeed, are one of the strongest arguments for cultural contemporaneity, regardless of the origin of the specific type. I have seen vessels found in the north which I suspect were carried in from the lower valley. One of the best examples was a large rim sherd of Marksville Red Filmed from the Clear Lake site, Tazewell County, Illinois. It is in the collection of Mrs. E. Schoenbeck of Peoria, Illinois. If vessels of Hopewellian style have Marksville or Troyville paste-characters they might be referred to the Delta Aspect, while grit and limestone tem-

<sup>151</sup> Ford, 1936, pp. 171, 217, 241.

<sup>152</sup> Central Mississippi Valley Archaeological Survey, 1941.

<sup>153</sup> Jennings, 1941, pp. 190-193.

<sup>154</sup> Walker, 1936; also see Setzler, 1933, Pl. 6. This interpretation is contrary to that of Ford.

<sup>155</sup> Moore, 1912, Fig. 6.

pered vessels would be classed as Hopewell. It is an interesting fact that one of the vessels from the Crooks site which has a cord-wrapped stick decoration, but is labeled Marksville Stamped,<sup>156</sup> conforms in size, shape, rim and lip treatment to larger vessels in the Illinois Valley. Two other examples of this northern Woodland-Hopewellian decorative technique were found at Crooks.<sup>157</sup>

There is a very strong similarity between the components classed in the Marksville and Troyville divisions. Identical sherds have been used to illustrate Marksville Incised and Yokena Incised,<sup>158</sup> and techniques sometimes regarded as Troyville are apparent at Crooks. Ford's original Marksville site, and the Marksville pottery from there would now presumably be classed as Troyville.<sup>159</sup> At Sicily Island, Weeden Island styles apparently come into the Coles Creek period about the time of the introduction, or the development, of the pyramidal mound.

This is not to deny a cultural and chronological separation of the two foci in the area around Marksville, but a similar separation has been difficult to demonstrate in other areas in the lower valley. In the interpretation presented in this paper, Marksville and Troyville together would not cover more than about 200 years at the outside.

As has been indicated, cultural relationships of the Delta Aspect are to be found up the Ouachita, and Arkansas River Valleys.<sup>160</sup> In eastern Oklahoma, Hopewellian remains at the Cooper site are interpreted as closely related to material found in the Kansas City area.<sup>161</sup> Wedel is at present working on an extensive analysis of this culture in the Missouri Valley, but will probably not modify his position regarding its relation to the Plains Woodland as recently expressed.<sup>162</sup> The Hopewellian pottery which I have seen from this area, as well as that from central Missouri, suggests that its closest cultural connections are with the Illinois Valley center. It is tempting to suggest that the presence of Hopewellian in this area is approximately contemporaneous with, and in some measure responsible for, the shift from earlier Woodland cultures into the various early divisions of the Plains phase. Possibly the incised decoration on rims of Upper Republican pottery, is derived from Hopewellian. Certainly the two culture groups cannot be far apart in time.

<sup>156</sup> Ford and Willey, 1940, Fig. 34.

<sup>157</sup> Ford and Willey, 1940, Fig. 20j and k; Fig. 28c.

<sup>158</sup> Ford and Willey, 1940, Fig. 37b and d, and Ford and Willey, 1939, Yokena Incised.

<sup>159</sup> Ford, 1935.

<sup>160</sup> Lemley and Dickinson, 1937; Dellinger and Dickinson, 1942.

<sup>161</sup> Information from D. A. Baerreis. <sup>162</sup> Wedel, 1940, p. 309.

## NORTHERN HOPEWELLIAN AND WOODLAND DIVISIONS

I have little to add to interpretations already presented regarding the cultural connections of Illinois Valley Hopewell.<sup>163</sup> With the addition of a recent paper on the Nickerson Focus<sup>164</sup> of northwestern Illinois there is now a considerable body of data available for comparative treatment. In Iowa, some of the oldest records of Hopewell remains were published by members of the Davenport Academy during the last part of the nineteenth century.<sup>165</sup> These sites are, for the most part, concentrated along the Mississippi and its immediate tributaries. Material in central and eastern Iowa, which might more reasonably be classified as Woodland, bears unmistakable evidence of Hopewellian associations in the ceramic decoration and stone projectile forms.<sup>166</sup> Material found in rock shelters and village sites in Allamakee, Jackson, Fayette, Floyd, Boone and Webster counties suggest that these are Woodland sites which are contemporary with Hopewellian.

One of the most interesting questions concerns the relation of Wisconsin Hopewell sites to Woodland manifestations in the area. There is no doubt that Woodland continued after Hopewell had reached its climax and disappeared. As in other northern centers, there is present in the Trempealeau Focus<sup>167</sup> an intimate association between vessels of the "ceremonial" Hopewellian type, e.g. limestone-tempered, imported wares, and vessels of plain, cord-marked, and cord-wrapped stick decoration. In any other context these would be adjudged Woodland. The artifacts and specialized pottery, which are peculiarly Hopewellian, are found amalgamated with pottery and general burial practices which can be considered Woodland in character from one end of the Mississippi Valley to the other. The pottery from the underlying village site at the Schwert Group is clearly Woodland. A cord-wrapped stick style of decoration and cord marked surface-finish is dominant. Other decorative devices are the horizontal row of rim nodes, the dentate stamp, outlined smooth areas with cord-roughened background, finger punctating, circular punctates, plain rocker stamping over a plain surface on the body of the sherd—identical to treatment found in Tchefuncte Stamped, Santa Rosa Stamped, and other early southern rocker stamped types—and linear punctate. The features of mound construction and burial correspond to some of those of the Illinois Valley Hopewell.<sup>168</sup> The burials are also

<sup>163</sup> Cole and Deuel, 1937; Quimby, 1941; Baker, Griffin, Morgan, Neumann, Taylor, 1941; Griffin, 1941a.

<sup>164</sup> Bennett, 1945.

<sup>165</sup> Various reports by Farquharson, Gass, Pratt and others in the early volumes of the Proceedings of the Davenport Academy of Science. J. H. Bailey is analyzing this collection for publication.

<sup>166</sup> Conversations with C. R. Keyes and my own inspection of the Iowa material.

<sup>167</sup> McKern, 1931.

<sup>168</sup> Griffin, 1945c.

similar to sub-floor burials in Adena, and in the stone slab mounds of the Mississippi Valley. Some of the features of the Trempealeau Focus which are identical to Ohio Hopewell, such as the obsidian blades, to a large degree, apparently, bypassed the Illinois Valley. It has recently been suggested that some of the blades that have been found in the Trempealeau Focus, at the Hopewell Component, and in the Portage Ridge conical mounds were made of a brown chalcedony taken from quarries in North Dakota.<sup>169</sup>

The Hopewellian complex of artifacts found in the southeastern section of Wisconsin is more closely connected with the Illinois Valley center than is the Trempealeau Focus.<sup>170</sup> A comparison of the pottery types from the respective locations makes this particularly clear. The majority of the obsidian implements from Wisconsin, when not definitely associated with Hopewellian sites, have been found in the two areas of southwestern and southeastern Wisconsin<sup>171</sup> where the heaviest concentrations of this culture complex are located. It is also significant that an obsidian point has been found on Isle Royale.<sup>172</sup> In the Mississippi Valley, the presence of obsidian is apparently a time marker. The strongest use of effigy mounds apparently belongs somewhere between the time when early, dominantly conical mound sites were in use and the appearance of Middle Mississippi at Aztalan. The allocation to the Effigy Mound Aspect of the copper bitted implement, square sided copper awls, harpoons, certain pottery traits, and burial customs, some of which also appear in Hopewellian, provokes the suggestion that while Hopewellian in its Ohio and Illinois Valley form was dominating part of the Wisconsin area, much of the state continued its northern Woodland tradition.<sup>173</sup> Sites in southeastern Minnesota<sup>174</sup> are known to have a strong representation of Hopewellian pottery and scattered reports indicate its presence throughout the southeastern corner of the state.

All of the Minnesota Woodland groups are variants on a common theme and can be expected to demonstrate a long period of growth and development.<sup>175</sup> As more and more excavation and analysis are carried on, both the sequence and wider cultural resemblances will become clearer. It is my belief that the Laurel Focus is to be equated in time with part of the Laurentian culture period in the northeast and with the Hopewellian. The occur-

<sup>169</sup> Bennett, 1945, p. 94.

<sup>170</sup> Gerend, 1904; West, 1905, pp. 122 and 126; also data from W. C. McKern.

<sup>171</sup> McKern, 1931, pp. 219-220; Lawson, 1903. <sup>172</sup> West, 1929, p. 36.

<sup>173</sup> McKern, Letter 7/26/43, does not see evidence for such a statement.

<sup>174</sup> Winchell, 1911, Pl. VI, facing p. 433.

<sup>175</sup> Wilford, 1941; McKern, 1937, p. 139. It is unfortunate that this suggestion of depth in the northern Woodland Pattern has not been developed subsequently.

rence of copper utilitarian artifacts and the plain-surfaced pottery having dentate stamp and linear punctate decoration in the Laurel Focus suggests an early association. The amount and variety of copper artifacts in Wisconsin and Minnesota clearly indicate that their proximity to the source of eastern United States native copper enabled the makers of these implements to employ it in a manner not common elsewhere, and to utilize it for their tools. In other areas different materials were more frequently employed to make artifacts of comparable shapes. However, some of the specific copper types of this area are found in other regions, such as New York and Illinois, where they appear associated with early and middle Woodland stages.<sup>176</sup> It would appear that the Monroe Mound, Duval County, Florida, where a copper spear point was found, is probably the most southern point of dispersion.<sup>177</sup> The propensity for imitating forms in copper or slate, in the northeast, is also one of the many basic resemblances to Neolithic sites in northeastern Asia.

The Howard Lake Focus is recognized by Wilford as early Mille Lac. The pottery, with its rather high proportion of dentate stamping on a plain surface, incised lines reminiscent of Hopewellian decoration, and a low percentage of cord-impressed designs, together with a predominance of stemmed points, bears out this suggestion. One of the sites of this focus produced a copper gorge, and a cut-stone tool which reproduces impressions identical to dentate stamp decoration. This cultural division has relations to Laurel and also to the later Arvilla Focus. Arvilla has strong Woodland affiliations as Wilford has pointed out<sup>178</sup> and he does not stress the Eskimo relationship emphasized by Jenks and denied by Strong.<sup>179</sup> The sites described by Montgomery in the eastern Dakotas certainly bear a relationship to the Arvilla Focus but are apparently distinct enough to warrant a separate culture unit which might be called the Devil's Lake Focus. The continuous incised decoration on this plain ware, mistakenly interpreted as coiling by one writer,<sup>180</sup> is unique, but designs on other vessels illustrated suggest Oneota.<sup>181</sup> This possibility would make the Devil's Lake Focus later than Arvilla thus helping to confirm Strong's hypothesis that these sites are representatives of a late movement into the Plains.

There are scattered evidences of Hopewellian influence in southern Ontario, mainly along the northern shore of Lake Ontario and around the

<sup>176</sup> McKern, 1939, p. 2. In a letter of 7/26/43, McKern states, ". . . I Can't honestly agree that the specific types of coppers shared by New York and Wisconsin . . . are Woodland in either area." This view is not shared by Ritchie. <sup>177</sup> Moore, 1896a, Fig. 24.

<sup>178</sup> Wilford, 1941, p. 243.

<sup>179</sup> Jenks, 1932; Strong, 1940, p. 385.

<sup>180</sup> Fewkes, 1937, p. 146.

<sup>181</sup> Montgomery, 1906, Pl. XXXI.

source of the St. Lawrence.<sup>182</sup> These sites are our most northern evidence of mound building east of the Mississippi. The accompanying ceremonial complex is probably associated with the middle Woodland period in the area. The Laurentian Upland may have offered too formidable a barrier for a continuous line of contact between this area and the early mounds in the old Lake Agazziz basin. Many of the mound groups in western New York<sup>183</sup> and western Pennsylvania<sup>184</sup> are connected with Adena-Hopewell.<sup>185</sup> Other burial complexes connected culturally and chronologically are found throughout New York and New England. These are classified in the Vine Valley Aspect, and may perhaps even include the Orient Focus. The Vine Valley Aspect may eventually be recognized as a specialized development of the Laurentian should the concept of this division be expanded.

### SWIFT CREEK

One of the most pressing needs in Southeastern archaeology is the collation and analysis of the archaeological manifestations known as Swift Creek.<sup>186</sup> While its general chronological position and cultural content have been made available there is not a single monograph which gives a well rounded picture of this early Woodland division. In the central Georgia area it is said to be associated, in its early stages, with fiber-tempered pottery, steatite ware, footed vessels,<sup>187</sup> simple stamping, plain grit-tempered ware and fabric-impressed sherds. These earlier pottery types gradually disappear and by the time Swift Creek merges with Hopewellian in north Florida they are not a part of the complex. The complicated stamping which forms the hall mark of Swift Creek and its Lamar Aspect descendants had an interesting virility, for it became widely distributed both in early and late periods. Its origins are unknown. It penetrated, by way of eastern Tennessee, into the Hopewell sites of Ohio, where the sand-tempered complicated-stamp sherds are suggestive of Florida derivation rather than central Georgia or Copena.<sup>188</sup> In southwestern Indiana, sand-tempered sherds, of Swift Creek character, have been found on sites possessing Hopewellian characteristics.<sup>189</sup> Neither specifically Adena, Hopewell or "Copena-like" complexes appear in eastern Tennessee, but interchange and overlapping of traits indicate that Woodland

<sup>182</sup> Wintemberg, 1928a.

<sup>183</sup> Parker, 1922, pp. 83-98; Ritchie, 1938.

<sup>184</sup> Thomas, 1894, p. 295.

<sup>185</sup> Bliss, 1942; I have prepared a paper on the pottery of the Sugar Run Mound Group which is to be published by the Pennsylvania Historical Commission as a part of the report on that site.

<sup>186</sup> Kelly, 1938, pp. 32-39; Willey, 1939; Willey and Woodbury, 1942.

<sup>187</sup> Moore, 1907b, p. 451.

<sup>188</sup> Ford and Willey have, I believe, misinterpreted this connection (1940, p. 140).

<sup>189</sup> G. A. Black, personal communication.

culture was present in the area when influences from northern Hopewell were traversing on their way to Georgia and Florida.

#### COPENA

The Copena Focus<sup>190</sup> in northern Alabama can be equated in time with the later years of northern Hopewellian and with the Troyville Focus (or time period) of the Delta Aspect. The limestone pottery types which are presumably Copena show connections with middle Swift Creek, and the Upper Valley Aspect in eastern Tennessee. This culture, while possessing a marked individuality of its own, has many resemblances to the basic Hopewellian burial complex. Its homogeneity in artifacts and mound construction suggests a relatively brief time span. It is not identified with the Alexander Series nor with the earlier limestone-tempered pottery types found in the Tennessee drainage. Copena plainly has some connection with the later Middle Mississippi complex for it includes globular vessels with an incised decoration on the rim; strap handles; the specialized Copena point; and small triangular points.<sup>191</sup>

#### CENTRAL INDIANA

It has been shown that in central Indiana, Hopewell had an intimate connection with the local Woodland cultures.<sup>192</sup> The variation between the Goodall Focus in the north, the Greene Focus in the central portion and the recently identified Hopewellian remains in southwestern Indiana will make an interesting study in regional interconnections.

#### OHIO HOPEWELL

Ohio Hopewell<sup>193</sup> is in some respects as unique now as it was to Squier and Davis. It has been the "Mound Builder Culture" par excellence and is still the standard against which other Hopewellian expressions are measured. The size and complexity of its large mounds and more spectacular earthworks are unrivalled in the continental area. The amount and artistic excellence of the artifacts manufactured by its artisans are outstanding in any collection of aboriginal American art. Both exotic and native raw materials were shaped into distinctive products the cultural associations of which are at once apparent. Not only were finished products distributed from this center, but artifacts made in other areas were brought back to southern Ohio. Fortunately for the archaeologist, the Hopewell people made of the burial

<sup>190</sup> Webb and DeJarnette, 1942, pp. 301-306.

<sup>191</sup> Webb and DeJarnette, 1942, Pl. 206, No. 2; Pl. 205; Pl. 29, No. 2; Pl. 207, No. 1.

<sup>192</sup> Black, 1933.

<sup>193</sup> See summaries by Shetrone and Greenman, 1931, and particularly that by Setzler, 1940.

mounds a museum, and in burial "potlatches," accompanied by ceremonial destruction of artifacts, they lavished their finest material objects upon the remains of the departed. This practice does not appear as a new concept in the area. It can be interpreted as an accentuation of similar caches, made on a less grandiose scale, which characterized early Woodland culture from Red Ochre to Red Paint. The effect which people with such burial attitudes have upon the continuity of art is not permanent. In fact, not only the objects themselves but to some degree the style in which they were made, almost totally disappeared from the Mississippi Valley. It has already been pointed out how some features of Caddoan pottery carry on a Hopewellian tradition,<sup>194</sup> and also how reflections of the style of zoned decoration, which is at least as old as the Alexander Series in pottery, and on bone work in the Pickwick Aspect, continues into the Weeden Island period on the coast and finds its last expression in the zoned engraving of Moundville and in Caddoan. The line and dot motif which never appears in Hopewell pottery in the north or in the Marksville Focus, but which is a part of the Ohio Aspect of engraved designs on bone,<sup>195</sup> appears on pottery of the Weeden Island style<sup>196</sup> and is reflected in the derived French Fork Incised pottery type. The application of this zoned decoration and use of the same motifs on pottery and on stone was also mentioned by Willoughby.<sup>197</sup> The prominent place of the bird, in art forms, can be seen in the bird-stones,<sup>198</sup> bird effigy mounds, and on an early steatite bowl from Poverty Point.<sup>199</sup> The specific style found on Hopewellian pottery appears on stone tablets and bone gorgets attributed to Adena<sup>200</sup> and is prominent among styles employed in decoration of bone objects; it also appears on copper plates and on platform pipes in the Ohio Aspect.<sup>201</sup> The use of the bird on the platform effigy pipes is well known. The art style and the arrangement of the ceremonial earth work enclosure have been associated.<sup>202</sup> The inter-connection between the bird, serpent, and cat which is widely spread in the New World and is accentuated in Middle Mississippi art,<sup>203</sup> is already present in Hopewell, as is the style used in its depiction. The swastika appears in copper and at the back of the head of an anthropomorphic pipe from the Edwin Harness Mound.<sup>204</sup> The antler headdress of later Middle Mis-

<sup>194</sup> Setzler, 1933, p. 21.

<sup>195</sup> Putnam and Willoughby, 1896, Fig. 2 and 7.

<sup>196</sup> Fewkes, 1924.

<sup>197</sup> Willoughby and Hooton, 1922, p. 93.

<sup>198</sup> Willoughby, 1935, p. 108.

<sup>199</sup> Personal communication, C. H. Webb.

<sup>200</sup> Webb, 1940, pp. 115-127.

<sup>201</sup> Moorehead, 1922a, Figs. 59, 63b, 65 and Pl. LXVI, LXXVII, Fig. 1; Mills, 1907, Fig. 54; Mills, 1922, Fig. 62.

<sup>202</sup> Moorehead, 1922a, p. 165; Willoughby, 1916.

<sup>203</sup> Phillips, 1940, p. 353.

<sup>204</sup> Willoughby, 1916, Pl. X.

sissippi cult figures, the flaring bitted, copper celt and negative painted designs on cloth are also "first" in Hopewell. The large effigy pipes of the Tennessee-Cumberland area (which are not Middle Mississippi types) are in Copena and were brought to the Seip component. They can be said to represent a transition from the platform style to zoomorphic forms of Middle Mississippi. Copper repoussé plates which appear in Middle Mississippi having designs suggesting Mexican influence are foreshadowed by those decorated with the spotted and plumed eagle at Mound City.<sup>205</sup> In spite of the difference in form and function of much of the Hopewell copper artifacts I believe there is a genetic connection with the copper artifacts of the early Woodland cultures from Minnesota to Massachusetts. Are the copper and mica crescents of Adena, Hopewell, and northeast Florida,<sup>206</sup> culturally unconnected with the stone crescents of New England?<sup>207</sup> Is this not simply another example of a fundamental series of cultural relations between Hopewell and the early cultures in the area, of which the polished stone artifacts are an obvious representative? Cremations and ceremonially prepared areas for cremations are earlier than Hopewell<sup>208</sup> although their classic expression is found in Ohio sites. The great majority of the burial practices have prototypes or analogies in early eastern divisions, and many of the concepts continued into the historic period. We will be more certain of the function of the elaborate linear earthworks and geometric figures associated with Hopewell when further excavations have ascertained whether they are defensive structures or utilized for other purposes. When excavation has revealed building structures, the meaning of the report of pyramidal mounds and graded ways at Marietta, Hopeton<sup>209</sup> and other Hopewell sites,<sup>210</sup> can be interpreted in the light of similar southeastern structures. Upon excavation, the pyramidal mound some distance from the Baum earthwork group turned out to be a Fort Ancient component. As Willoughby has maintained for years, and as can be shown from the literature, the dominant ceramic ware of northern Hopewell is Woodland. In the various Hopewellian centers, the pottery as well as the other material culture content reflects the area in which it is found and each is recognizably distinct from that in the other centers.

It is erroneous to speak of *an* origin for Ohio Hopewell, or for any Hopewellian focus. There were many origins for many different traits, and these

<sup>205</sup> Mills, 1922, Figs. 60-61, 65.

<sup>206</sup> Moore, 1896a, Fig. 60.

<sup>207</sup> Willoughby, 1935, Fig. 38.

<sup>208</sup> Webb and DeJarnette, 1942, pp. 238, 243.

<sup>209</sup> Squier and Davis, 1847, Pls. XVIII, XXVI; Pl. XXI, No. 1.

<sup>210</sup> Shetrone, 1926, p. 65. Excavation of the Ginther mound did not confirm its reported pyramidal shape, nor had it been used as a substructure.

were combined in the different areas into regional associations. These are isolable blocks of culture traits. There was, among the regions, a marked interchange of ideas, materials, finished products and no doubt of people. However, the role race played in the development of Hopewell is still to be written. These culturally related and contemporaneous groups possessed only a portion of Hopewell attributes. These were combined with other features which are rarely recognized as Hopewell. Thus there are mound groups and village areas, in Hopewell sites, which are not typically Hopewell. A possible explanation of this is that some sites, such as those in the Crab Orchard Focus, are the remains of a tribe or group which was distinct from the Hopewell tribe or nation.

While the form and utilization of the large mounds and enclosures associated with Adena-Hopewell differ significantly from the later Middle Mississippi mound groups, there are some resemblances. In both cases, the large mound groups evidently formed a group or tribal center which was utilized primarily for socio-religious activities on a scale greater than that afforded by the ordinary villages. They were a focal point which in their prime probably were utilized for only relatively short periods. The walls surrounding some Middle Mississippi sites were utilized as part of a defensive stockade, whereas the Hopewell and Adena circles and geometric patterns were primarily associated with socio-religious observances. Widespread trade of materials and finished products which first became common in the Hopewellian period continues into the succeeding Mississippi stage. The increase in population suggested by the increase in the size of the individual sites, plus the increased number of recognizable components belonging to these specific culture groups in recognizable time periods, reflects the growing importance of corn. Unknown from Adena sites, it is rare in Hopewellian but plentiful in sites of the Mississippi period from one end of the country to the other.

#### MIDDLE MISSISSIPPI AND RELATED GROUPS

The previous discussions have presented the idea that throughout the eastern United States, during a period estimated to be about 1200 to 1400 A.D., there developed a culture type which formed a socio-economic base upon which elements of the succeeding Mississippi period were easily grafted (Figs 6 and 7). A single center of origin of the Mississippi "Pattern" is not recognized here. Instead, a gradual growth throughout the valley is postulated. In other words, various ideas and complexes developed in several centers the whole to be welded into classic Middle Mississippi. Finally, in late proto-historic or perhaps even historic times, the culture expanded to cover a wide area in central North America. This expansion was accompan-

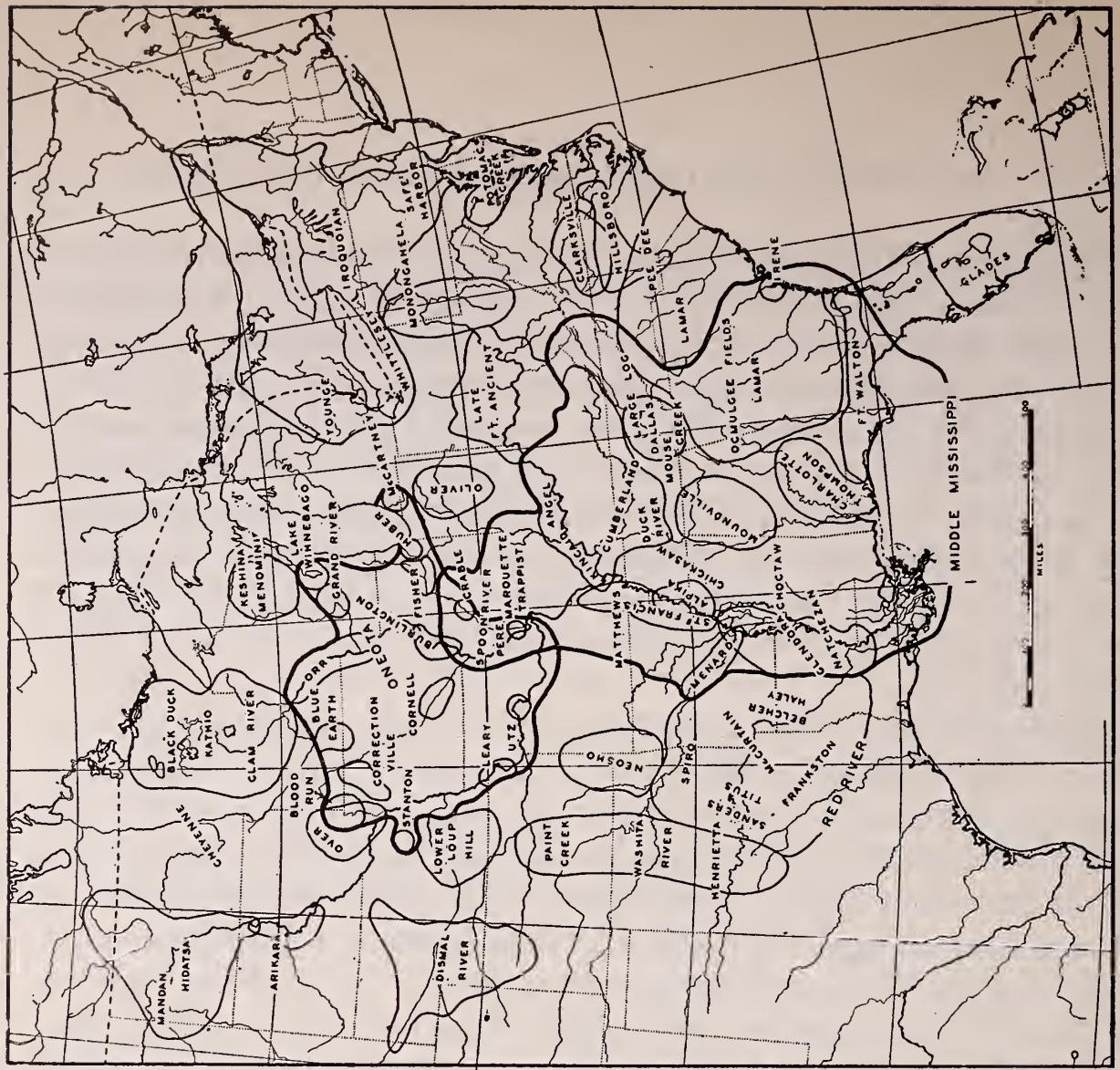


FIG. 7.—Late Mississippi and related groups in the United States.

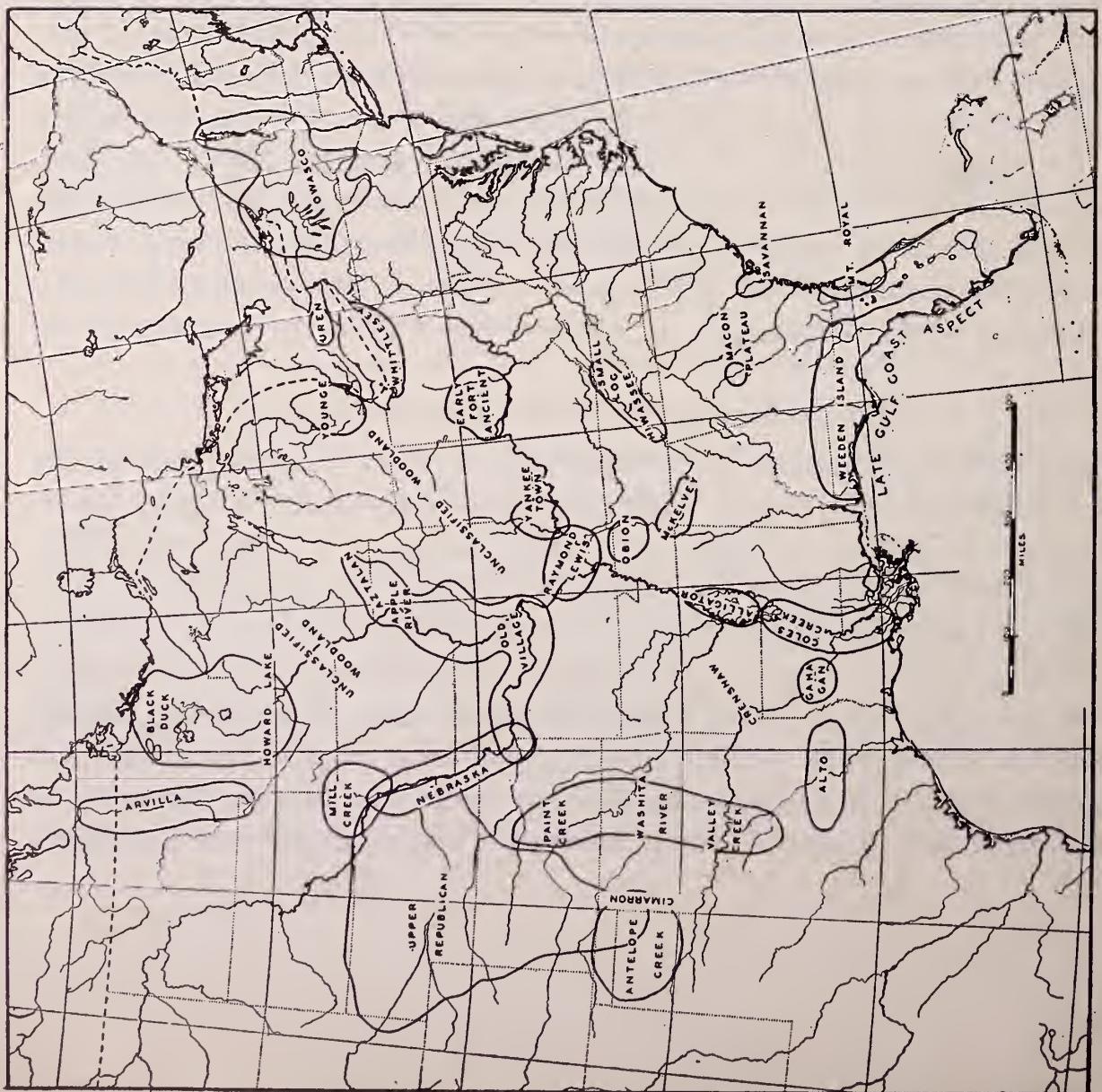


FIG. 6.—Early Mississippi and related groups in the United States.

ied by the rapid spread of the "Buzzard Cult".<sup>211</sup> Because of this, Middle Mississippi is now found from points near the Georgia coast west to Spiro, in Oklahoma, and from central Illinois south to Selzertown. The cult, as a complex, has not been reported from the lower Mississippi valley or from Texas.

#### SOUTHEASTERN DIVISIONS

The Florida east coast participated in the gradual shift from a culture with Hopewellian leanings to one which can be included in the early to middle Mississippi. Some sites there were coeval with the Weeden Island period.<sup>212</sup> The largest and best known sand mounds, Mt. Royal and Grant, as well as other sites, indicate that toward the end of the aboriginal occupation of the St. John's area there were cultural connections with Middle Mississippi and with sites in the Caddo area like Gahagan.<sup>213</sup> On the west coast, the Weeden Island period saw a marked development in ceramics. The perpetuation and refinement of techniques and motifs continued from the Hopewellian period and there was a notable increase in the use of zoomorphic representation which gave prominence to various types of birds. Included in this are modeled bird heads resembling the incised specimens of the Hopewellian period.<sup>214</sup> There is also a tendency for some of the effigy heads on bowls to face inward.<sup>215</sup> This feature has also been observed on sherds of the type called Monks Mound Red,<sup>216</sup> associated with the Old Village Focus at Cahokia in Illinois. The appearance of human effigy clay vessels<sup>217</sup> apparently foreshadows their arrival in the St. Francis and Tennessee-Cumberland areas. The Weeden Island influence penetrated up the Chattahoochee, Flint, and Choctawhatchee into southern Alabama and Georgia.<sup>218</sup> The succeeding period, now called Fort Walton, is an interesting example of the merging of two cultural groups which evidently took place almost entirely within the historic period. The specific area from which these dominant Middle Mississippi traits was derived is from near Montgomery, Alabama. They comprise a diluted Moundville influence together with some traces of Natchesan. Under the current concepts of chronology in the area,

<sup>211</sup> This term does not refer to birds featured in the art forms but rather to the activities of the proponents of the cult theory or interpretation of the late Middle Mississippi ceremonial centers. There are those who prefer the more dignified and less confusing term "The Southern Cult."      <sup>212</sup> Moore, 1894, pp. 7-15.

<sup>213</sup> Moore, 1894, pp. 16-35, 200-204; 1896a, pp. 473-488.

<sup>214</sup> Moore, 1894, pp. 16-35, 200-204; 1896a, pp. 473-488.

<sup>215</sup> Moore, 1902, Figs. 288, 291, 304.

<sup>216</sup> A similar type is called Prospect Red Filmed in the Guntersville Basin report.

<sup>217</sup> Moore, 1902, Figs. 126, 321.

<sup>218</sup> Moore, 1907b, pp. 429-437, 38-46; pp. 452-456.

this cultural movement should have taken place during the latter part of the seventeenth century. If the Spanish-Mexican coin obtained by Moore with material of this type at Bear Point<sup>219</sup> is correctly dated and roughly represents the date of its burial (1520-50) then our ideas of chronology are wrong. If, however, the coin was preserved for some period before burial, then its incidence would correspond to that of the large amount of other European artifacts associated with the Fort Walton-Charlotte Thompson period.<sup>220</sup>

At the Irene site, the culture complex associated with the complicated stamped wares, reminiscent of late Swift Creek, was not well represented but the delineation of this period will probably be made in the near future. The Irene-Savannah Focus is an interesting combination of traits such as pottery shape and decoration, burial practices, and some other characteristics, carried over from the preceding cultures which are more definitely Woodland. These Woodland cultures have adopted in one way or another those styles of house structure and ceremonial mound complex, usually considered Mississippian, which were heretofore believed to be associated, exclusively, with shell-tempered pottery. Certain architectural features, such as the entrance way and semisubterranean character of the structure differentiate them from the late Middle Mississippi houses. The early part of the Irene-Savannah Focus is probably roughly coeval with the Macon Plateau Focus and other early Middle Mississippi sites. As has been suggested, the last stage in the Savannah area is related to the Lamar Focus. Early European contact on the coast interrupted aboriginal development there before the Ocmulgee Fields Focus was evolved in central Georgia.<sup>221</sup> The possibility that the language spoken by the peoples of the Irene complex was Muskhogean and that Irene is the end product of a regional culture-growth further emphasizes the need for adequate correlation of physical types associated with specific cultural units in order to determine the roll of migration and diffusion in the spread of prehistoric culture.

To the north transition from a definite Woodland culture to a definite Mississippi culture probably occurred during the last stages of the limestone tempered pottery horizon of eastern Tennessee. Plain-surfaced, and brushed surface were dominant characteristics of this pottery. However, a "pure" Mississippi culture site is not recognized in this area until the series of traits called by Webb, Small Log Town House made its appearance. In the Chick-

<sup>219</sup> Moore, 1901, p. 426.

<sup>220</sup> Moore, 1900, pp. 319-333; also Thirty-Acre Field and Durand's Bend sites. These sites are, I believe, close to 1700.      <sup>221</sup> Caldwell and McCann, 1941, p. 3.

amauga area this group of traits is called the Hiwassie Focus.<sup>222</sup> This complex and the closely related Macon Plateau Focus was believed to be early Middle Mississippi in 1937 when the Fort Ancient material was being compared with data from the southeast.<sup>223</sup> Possible contemporaneity is suggested with the Old Village Focus at Cahokia primarily because both are early Mississippi complexes in their respective areas. The cultural differences are strongly marked. The Hiwassie Red-on-Buff painted ware, associated with this period, is distinctive and its distribution is apparently limited to northeastern Alabama and southeastern Tennessee.<sup>224</sup> Its style is reminiscent of Weeden Island. It did not occur in the sherd collections from the Norris Basin studied by the writer. There is a possible connection with the Cumberland painted effigies which are presumably somewhat later in time and associated in the Cumberland area with the Buzzard Cult. The presence of this early Middle Mississippi complex on the eastern margin of its area of distribution has been interpreted as resulting from a movement of people from the west. As far as is now known, there are no units in the central or lower Mississippi Valley which have types ancestral to this complex, although the Obion Focus of western Tennessee has some similar traits. The Central Mississippi Valley Archaeological Survey has so far been signally unsuccessful in locating a complex which is both Middle Mississippi and, at the same time, early. Nor do any of the possible "proto-Mississippi" complexes in eastern areas present a logical cultural ancestor for the Macon Plateau, Hiwassie, and Small Log Town House assemblage. The claim for antiquity of this material is not too great, but if any Middle Mississippi complex in the Southeast preceded, or was contemporaneous with, DeSoto, this should be the one.

The ceramic material at Site 11, and to some degree at Site 10,<sup>225</sup> in the Norris Basin may be viewed as transitional. It probably represents the change from the Small Log Town House to the latest material. The sequence is accompanied by an increase of the traits Harrington called Cherokee. The recent excellent archaeological and analytical work done by the University of Tennessee on cultures of the Chickamauga Basin has redefined the late cultural material into more meaningful groupings. It is suggested by Lewis and Kneberg that people of the Dallas focus assimilated the earlier Hiwassee people, but it is at least possible that the latter culture was derived from the earlier for it participated in the great development of Middle Mississippi art. The Dallas and Mouse Creek foci, in the present chronological in-

<sup>222</sup> Lewis and Kneberg, 1941.

<sup>223</sup> Griffin, 1943a, pp. 246-258.

<sup>224</sup> Harrington, 1922, Pl. LXII, and Fig. 31; Moore, 1915, Pl. 8.

<sup>225</sup> Griffin, 1938, p. 308.

terpretation, are certainly contemporary with and lasted beyond the De Soto period.<sup>226</sup> The possession of specialized ceremonial objects in common with Spiro, Moundville, Etowah, and other focal centers, but without the specific pottery types of those centers, indicates a common participation in a widespread ceremonial phenomenon (the Buzzard Cult). It is not necessarily indicative of tribal movements. The present ethnic identification of the Chickamauga peoples does not satisfy the present writer because none of the sites can be unhesitatingly attributed to the tribes suggested.

This growing ability to assign definitely, or even tentatively, cultural blocks to known tribes is one of the most fortunate results of the recent archaeological activity in the southeast. The recognition of Cherokee material at Peachtree<sup>227</sup> during the main period of the occupation of the site corroborates the assignment of Nacoochee<sup>228</sup> to the same tribal group. Some portion of the material from Etowah<sup>229</sup> is also closely related to specimens from Nacoochee. However Site 19;<sup>230</sup> other sites assigned to the Cherokee by Harrington;<sup>231</sup> Carters Quarter;<sup>232</sup> and those excavated by the Bureau of American Ethnology<sup>233</sup> in the same area are significantly different in culture. They are probably contemporaneous and there may have been an interchange of some traits. Part of the difficulty is that while Site 19 is presumably dated about 1650-1700, the known Cherokee sites in eastern Tennessee are dated about 1750. Furthermore, the latter have a strong element of complicated stamping which may be a trait brought by a movement of Underhill Cherokee into the Overhill area.

#### LOWER VALLEY COLES CREEK AND MIDDLE MISSISSIPPI

The pottery illustrated by Collins from the Deasonville site exhibits a mixture of late Middle Mississippi and slightly Natchezan characteristics. This is almost certainly later than a complex made up of cord-marked pottery<sup>234</sup> and a plain-surface ware having horizontal lines on the outer rim of vessels included in a generalized Coles Creek Incised style.<sup>235</sup> This segregation of the pottery from the Deasonville site into two recognizable and chronological groups suggests that "Deasonville" should be abandoned as a term for either a cultural unit or a ceramic complex. It is also suggested

<sup>226</sup> Griffin, 1944b.

<sup>227</sup> Setzler and Jennings, 1941.

<sup>228</sup> Heye, Hodge and Pepper, 1918.

<sup>229</sup> Moorehead, 1932.

<sup>230</sup> Webb, 1938.

<sup>231</sup> Harrington 1922.

<sup>232</sup> Moorehead, 1932.

<sup>233</sup> Thomas, 1894, pp. 366-405; also Griffin, 1943a, pp. 246-258.

<sup>234</sup> This belongs largely in a period later than that associated with Marksville. However it does occur at the Marksville site and is called Deasonville Cord Marked.

<sup>235</sup> Collins, 1932.

that the term "Coles Creek" has been applied to quite a number of differing cultural assemblages so that now the exact meaning is obscure. It is difficult to tell whether Coles Creek is a time period, a ceramic complex, or both, and suitable criteria for its differentiation and recognition are lacking.

Coles Creek is used here to denote both a regional and chronological equivalent of early Middle Mississippi. Its association with this time period is borne out by the suggested presence of syphilis at the Morgan site,<sup>236</sup> on the Gulf Coast. Evidence of this type of bone pathology is almost a Mississippi "determinant." If the pottery of the Coles Creek and Plaquemine periods at Troyville was made by the builders of the mound group and earth work, as I believe most likely, and, if the earthworks at Marksville were built during the Coles Creek occupation<sup>237</sup> a situation comparable to that farther up the Mississippi Valley will be recognized. Some of the pyramidal mound groups in northern Mississippi were built during a stage when clay-tempered, plain and cord-marked pottery were the strongest elements in the ceramic complex.<sup>238</sup> However, the sites continued to be occupied during the immediately succeeding period when shell-tempered pottery was prevalent. This latter period is contemporaneous with Plaquemine and Natchezan. The association between granular-tempered pottery and early pyramidal mound is not confined to the lower Mississippi Valley, for an analogous situation has been observed in southeast Missouri,<sup>239</sup> western Tennessee,<sup>240</sup> southwestern Indiana,<sup>241</sup> northern Alabama,<sup>242</sup> and, as already mentioned, at the Irene site in Georgia. The large mound groups were not completed during this early period nor were the widespread Buzzard Cult art forms in evidence. They are very rare in the lower valley at any period.

The Big Black Focus,<sup>243</sup> as Ford has clearly demonstrated, has a relationship to the earlier Coles Creek on the one hand and, on the other, to such late Middle-Mississippi foci as Alpika<sup>244</sup> in northwestern Mississippi and to Moundville. The presence of Chickachae Combed, an historic Choctaw type

<sup>236</sup> Collins, 1941a, p. 147.

<sup>237</sup> Setzler, 1933, Pl. 6.

<sup>238</sup> Central Mississippi Valley Archaeological Survey, Season 1941. The Alligator site (16-N-2) by Griffin. The Oliver site (16-N-6) by Phillips.

<sup>239</sup> Walker, 1942.

<sup>240</sup> The Obion Focus; personal communication, Madeline Kneberg, April, 1942; The McKelvey site (Hn 1) according to Haag, 1942b, p. 522, but compare Webb and DeJarnette, 1942, p. 24.

<sup>241</sup> Black's Yankeetown site (Black, 1941, p. 34) and the Pyramid site near Vincennes (Lilly, 1937, pp. 76-77).

<sup>242</sup> As Haag points out, occupation by a people making clay-tempered pottery can be equated with Coles Creek and late "Baytown"; it succeeded the preceding period when granular limestone was used for temper in northwest Alabama. See also the Bessemer Site, (DeJarnette and Wimberly, 1941).

<sup>243</sup> Ford, 1936, pp. 115-129. These are called Temple Mound I in Ford and Willey, 1941.

<sup>244</sup> Brown, 1926; the material from Walls is typical of this focus.

and of historic Natchez Fatherland Incised in this focus is also significant from the standpoint of its connections. It probably represents a group with a late Coles Creek culture which was gradually being submerged by the southward movement of Middle Mississippi influences or people. Ford reports one pyramidal mound from these sites; the rest are characterized by small conical burial mounds.<sup>245</sup> However the artifacts and pottery leave little doubt concerning cultural or chronological associations.

This Big Black Focus, as Quimby has pointed out, is equivalent to the Plaquemine Focus of southeastern Louisiana and this is separated from the historic Natchezan Aspect by very little significant cultural change.<sup>246</sup> This latter grouping has been defined by comparative studies of enough cultural and historical data to permit considering it a "cultural" and not a ceramic complex. Its archaeological relationship substantiates the known trade and other relations with Caddoan groups to the west, and with Choctaw and other Muskgogean groups to the east.

Along the Bayou Macon, in southeast Arkansas, a late occupation is represented at the Hog Lake site<sup>247</sup> where the material equates with the Plaquemine Focus, Selzertown, the Blum Mounds, and with Moundville. It shows indications of Natchezan Aspect material and some of the specimens represent the actual infiltration of central valley Middle Mississippi types.<sup>248</sup> Connections with the Glendora Focus and with Caddo of southwestern Arkansas are also suggested.

The Glendora Focus of northern Louisiana, of which the Glendora and Keno<sup>249</sup> sites are representative stations, shows intimate connections with the Caddoan sites to the west,<sup>250</sup> with the late occupation in the lower Arkansas as represented around the Menard site,<sup>251</sup> and with Natchezan. The presence of European trade goods, datable about 1700, with aboriginal burials lends further emphasis to the lateness of the period which is indicated by the pottery and other artifacts. The material from the Keller Place,<sup>252</sup> farther up the Ouachita, has connections with Tennessee-Cumberland, Alpika Focus, and Moundville thus indicating a somewhat different and slightly earlier association. In other words, the Keller Place was in existence during the days of the Buzzard Cult whereas the Glendora Focus was certainly later. The pipes belonging to the former are much closer to Middle Mississippi than they are to the western Caddo. Presumably the Glendora Focus will be associated with an eastern Caddo group such as the Ouachita.

<sup>245</sup> Ford, 1936; p. 218.

<sup>246</sup> Quimby, 1942.

<sup>247</sup> Lemley and Dickinson, 1937.

<sup>248</sup> Lemley and Dickinson, 1937, Pl. 3, Fig. 3. (This bottle is No. 4 of the legend.)

<sup>249</sup> Moore, 1909, pp. 27-80; pp. 120-151.

<sup>250</sup> Walker, 1935, p. 12.

<sup>251</sup> Moore, 1908, pp. 486-511.

<sup>252</sup> Moore, 1909, pp. 91-96.

## ARKANSAS, TEXAS AND OKLAHOMA

Knowledge of the Caddoan cultural units of the Four States region<sup>253</sup> is rapidly enabling a segregation into local focal units. Earlier sites of the general Hopewellian period have been reported<sup>254</sup> and the Weeden Island connections in southwest Arkansas have been described.<sup>255</sup> However, the story of the cultural development of this area is now obscure. Even so it promises to be of considerable importance in presenting the correct perspective on the origins of Caddoan culture. The indigenous pottery was predominantly incised. Hypothetically this style was fused with an intrusive complex which brought engraving into the area.<sup>256</sup> If this idea is modified to include more than one outside influence it will probably stand. Certainly no single source is responsible for Caddoan culture. A late stage of the ware was found at the Belcher site.<sup>257</sup> The emphasis on incising, the use of punctate designs and brushed surfaces indicates a relationship to both Coles Creek and Plaquemine. In its purer form this ware represents the Coles Creek and early Middle Mississippi time period in the Red River Valley.

The strong cultural influences from the Florida area which were found at the Crenshaw and Gahagan sites in Arkansas and Louisiana are to be seen also in southwest Arkansas. The presence of two vessels in the same grave illustrates the opinions concerning the temporal positions of these groups. One vessel had general Weeden Island-Coles Creek characteristics; the other was a Middle Mississippi shell-tempered jar. Such sites as the one at Mineral Springs would well repay careful stratigraphic tests.<sup>258</sup>

The late occupation in the Arkansas Valley extending from the Menard site westward, represents an intimate fusion of cultural elements from St. Francis, Alpika, Natchezan and Caddoan. It is suggested that this complex be called the Menard Focus. It has been tentatively identified by Walker and by Dickinson as Quapaw.<sup>259</sup> It is possible that the proto-historic Arkansas occupied the lower Ohio Valley area from the mouth of the Wabash to the Mississippi. The site which most strongly suggests this is one excavated by Moorehead.<sup>260</sup> Most of the material recovered is now in Indianapolis but some of the pottery is in the Ceramic Repository. While studying the collection in 1934 it became apparent that the principle cultural connections were with the Matthews and Alpika foci but there was

<sup>253</sup> Arkansas, Louisiana, Oklahoma and Texas.

<sup>254</sup> Dickinson and Lemley, 1939. <sup>255</sup> Lemley, 1936; Dickinson, 1936.

<sup>256</sup> Webb and Dodd, 1939, p. 121; Dickinson and Lemley, 1939, p. 188.

<sup>257</sup> Webb and Dodd, 1941, p. 114. <sup>258</sup> Harrington, 1920, p. 89.

<sup>259</sup> Walker, 1935, p. 14; Dickinson and Dellingar, 1940, p. 95.

<sup>260</sup> Moorehead, 1906, pp. 62-86.

some relationship with the Kincaid-Angel type of culture.<sup>261</sup> Some of the objects also suggest an Oneota relationship. A possible interpretation is that this site is the result of a late pre-historic Akansa push into the lower Ohio where it was contemporaneous with the later stages of Tennessee-Cumberland and with the development of Oneota. The site is distinctively atypical of the region as represented by the Angel site. Neither is it closely connected to Fort Ancient. It should be reinvestigated to check the variety of material asserted to have come from this one locality. A study of the late sites along the Arkansas would perhaps indicate the movement of Siouan groups from east to west and their gradual shift from the late Menard Focus culture to one resembling the Neosho Focus<sup>262</sup> of northeast Oklahoma. Here a mixture of Middle Mississippi and Oneota is present. In this connection the strangely mixed ceramic complex from the late levels of the Ozark Bluff shelters should be examined in the light of this western movement of Siouan groups and with their connections with Oneota and the Paint Creek culture.<sup>263</sup>

I speak with a great deal of hesitation about the place of Texas archaeology in this general culture picture. The data used herein is derived entirely from Alex Krieger<sup>264</sup> who has recently prepared an excellent classification and chronology of Texas culture. It has been evident for some time that a generalized Caddoan culture was distributed over the eastern portion of the state. Underneath the protohistoric Caddo there are recognizable cultural units which continue on into the Caddo period. A cultural relative of Hopewellian, the Orange Focus, has been identified in east Texas. This is succeeded by the Alto Focus which is apparently a temporal and regional equivalent of Coles Creek, Weeden Island and early Middle Mississippi. The Alto site produced pipes and projectile types which are comparable to specimens from Gahagan. With the increase of Mississippian influence and the approach to historic Caddo, a number of later cultural divisions can be recognized. Krieger has suggested that these be included in the Fulton Aspect. He includes in this Aspect the Belcher Focus, comprised of the upper levels of the same site and presumably the closely related sites described by Moore.<sup>265</sup> Culturally and temporally related sites in east Texas are assigned to the Texarkana Focus which has trade connections with the Belcher Focus. Slightly to the west in the Sulphur River area, the Titus Focus is also regarded as having Caddoan affiliations. In the same area with the earlier Alto Focus (Cherokee county) the late prehistoric and historic complex probably to be assigned to the Cenis or Asinai tribes is called the Frankston Focus.

<sup>261</sup> Putnan, 1875, p. 338.

<sup>262</sup> Baerreis, 1940.

<sup>263</sup> Dellingar and Dickinson, 1942.

<sup>264</sup> Krieger, n.d.

<sup>265</sup> Moore, 1912, the Friday, Foster, McClure, and Battle sites.

In northwestern Lamar County, the T.M. Sanders site, an interesting relative of the Spiro Focus, is assigned by Krieger to a period dating about 1500. This is considerably earlier than the chronology followed in this paper.

In north-central Texas, a prehistoric Henrietta Focus is succeeded by historic remains of the Wichita. These have been called the Spanish Fort Focus. As all these data are classified, their possible derivation from other focal units which together form the Prairie Aspect is recognized. In the Panhandle area, the Antelope Creek Focus is probably connected with the early Plains Phase of which the Upper Republican is the central Plains representative.

In western Oklahoma, the Cimarron Focus<sup>266</sup> equates with the Antelope Creek Focus and these sites have trade wares from the Southwest which date them approximately between 1300 and 1500, in spite of the fact that some of the specimens go back to 1250. This focus, Clements believes, is a part of the Upper Republican Aspect. Part of the importance of these early southern divisions of the Plains Phase is that they indicate contact and trade relations between the Southwest and the Plains at a fairly early period. Evidence of the introduction of Woodland and Sterns Creek-like elements into the Southwest is reason for believing that this contact probably preceded the development of Upper Republican and related groups. The presence of corn in the Nebraska Woodland may be significant here. It is a safe prognostication that interchanges of cultural influences back and forth between the Plains and the Southwest will be more clearly recognized in the future than they are at present. No matter by what route the influences came, I should also like to add my voice to those who recognize a striking similarity between the effigy forms of the Casas Grandes pottery<sup>267</sup> and those of Middle Mississippi.

Farther to the east, in Garvin County, Oklahoma, a Washita River Focus is recognized. This is intimately connected with sites of the Prairie Aspect sites, in north central Texas, and with the Paint Creek culture, in Kansas.<sup>268</sup> The cultural connections indicate a date of approximately 1550 to 1700 for this central Oklahoma group.

The majority of the cultural material belonging to the Spiro Aspect<sup>269</sup> appears to belong to the late prehistoric period in eastern Oklahoma and the

<sup>266</sup> Personal communication from D. A. Baerreis and F. E. Clements as is also the following information on Oklahoma.

<sup>267</sup> Lilly, 1937, p. 242; Phillips, 1940, p. 363.

<sup>268</sup> Wedel, 1942.

<sup>269</sup> Orr, 1939; Howard, 1940; Finkelstein, 1940. Krieger questions the use of Spiro as both an aspect and a focus name. He suggests Gibson Aspect for the early "Caddo" sites and Fulton Aspect for the later foci.

Southeast in general. It unmistakably bears the mark of participation in the widespread Buzzard Cult and the Spiro site was probably the "cathedral" of the middle Arkansas Valley "diocese". Reports by University of Oklahoma archaeologists have pointed out that the Spiro Aspect has many relationships with historic and prehistoric Caddoan sites, and even with sites assignable to Coles Creek. It also has many interesting cultural cross-overs with the late Middle Mississippi groups and connects with the Sanders Focus in north Texas. The Spiro Aspect has been divided into an early Spiro Focus and a later McCurtain Focus. This latter division is marked by changes in burial customs, pipes, and pottery which indicate relationships with the Frankston, Titus, Glendora and Belcher foci.

#### CENTRAL AND NORTHERN MISSISSIPPI VALLEY

There is little or no evidence of contact between Hopewellian and Middle Mississippi in Illinois.<sup>270</sup> Some of the material classified in the Illinois Bluff Focus,<sup>271</sup> and some of the clay- and grit-tempered pottery from the Cahokia area is evidence suggesting that there was a gradual shift from Woodland to Mississippi. There is some evidence from such sites as Guy Smith and Korando in southern Illinois<sup>272</sup> and from sites near St. Louis<sup>273</sup> that the Woodland tradition was still strong, at least in the pottery industry, among some of the communities existing close to the historic horizon. The sites of this period, in southern Illinois, have connecting links with the latest bluff mounds; with the Corbin site near Starved Rock, Illinois; and with the last pottery-using group at the Fisher site.<sup>274</sup> This latter group, incidentally, was fairly well acculturated by European trade, but still used native Lake Michigan pottery. The Perrine collection from Union County, Illinois, in the Field Museum, and the collections obtained by the Bureau of American Ethnology in the same general area indicate strong relationships with the Middle Mississippi cultures of southeastern Missouri and markedly less relationship to the Cahokia and Spoon River groups. There are also connections with Tennessee-Cumberland as is evidenced, among other traits, by the presence of a stone effigy figure.<sup>275</sup>

There was a heavy population of Middle Mississippi people in the Illinois Valley who were closely connected culturally with the inhabitants of the

<sup>270</sup> This position will be modified as a result of material from the southern Illinois valley excavated by Titterington. This suggests continuity from late Hopewellian to Old Village.

<sup>271</sup> Titterington, 1935 and 1940.

<sup>272</sup> Griffin, 1941b.

<sup>273</sup> Adams, 1941: particularly the Plattin Focus.

<sup>274</sup> Langford, 1927, Pl. XXIe.

<sup>275</sup> Perrine, 1874, p. 410. This is illustrated in Vaillant, 1939, Pl. 13.

Cahokia area.<sup>276</sup> Most of this occupation is comparable to the material Kelly called the "bean-pot" culture<sup>277</sup> and which has since been tentatively identified as the Trappist Focus. There is some indication in the Illinois Valley of pottery belonging to the Powell Polished Plain type,<sup>278</sup> but most of the pottery and artifacts belong to the later level at Cahokia; it is included in the Spoon River Focus in central Illinois. European trade material, in a site of this culture, has been found only once in a mound on the shore of Lake-Peoria. The material was directly associated with the copper eagle which has been so often illustrated.<sup>279</sup> Another possible association of Middle Mississippi and the historic period, in southern Illinois, is at the Hale site.<sup>280</sup> The discovery of copper at the Peoria site and at those in Union County,<sup>281</sup> are the northernmost locations from which the late Buzzard Cult art-forms have been obtained. Additional confirmation of the historic character of these groups is needed, however, before we can be sure of this association.

One of the most interesting problems in the central Illinois Valley is the presence, at a number of sites of the Spoon River Focus, of sherds which are entirely characteristic of Oneota, and of others which are dominantly Middle Mississippi except that they bear Oneota designs.<sup>282</sup> While this could be interpreted as the result of a development of Oneota out of Spoon River, it is more likely that the combination of these straits followed an intermixture of two types which had previously crystallized. The Fisher Focus material, classified as Upper Mississippi, belongs in this same time period and has elements in common with both Spoon River and Oneota.

The information available in the Cahokia area has hardly been touched. The work at the Cahokia site under Moorehead, and later under Kelly, merely opened up the possibilities, suggesting what can be obtained by careful stratigraphic exploratory excavations. The ceramic complex of the Old Village Focus is distinctive. The tall beaker<sup>283</sup> is suggestive of certain Weeden Island forms<sup>284</sup> while a shallow plate with short vertical rim<sup>285</sup> has analogous forms in the Coles Creek Aspect with which it is almost certainly contemporary. At least two sherds of the Coles Creek style, found in the vicinity of Monks Mound, are presumably evidence of trade.<sup>286</sup> A type of limestone-tempered pottery, almost always with a red slip, which I called

<sup>276</sup> Cole and Deuel, 1937; Griffin, 1941b.

<sup>277</sup> Kelly and Cole, 1931.

<sup>278</sup> Simpson, 1939.

<sup>279</sup> Powell, 1894, p. xxxix.

<sup>280</sup> Thomas, 1894, p. 154.

<sup>281</sup> Thomas, 1894, p. 161.

<sup>282</sup> Personal examination in 1939 of University of Chicago collections and the McGirr collection from the Crable site.

<sup>283</sup> Titterington, 1938, Fig. 43.

<sup>284</sup> Fewkes, 1924, Pl. 11.

<sup>285</sup> Titterington, 1938.

<sup>286</sup> Personal examinations of Titterington's collection.

Monks Mound Red,<sup>287</sup> is found at Cahokia, where it is associated with the Old Village Focus. This pottery is also found at Aztalan. The running scroll and carefully executed incised decoration on the shoulder area pots belonging to the Ramey Incised type<sup>288</sup> is not a part of the early Middle Mississippi cultures of the southeast. Therefore it may be suggested that we have here a possible origin of the designs and shapes may be found in the Lamar Incised style. However, there are other vague resemblances to Caddoan, but until more is known of the cultural depth present in the Caddo country, such suggestions are somewhat premature. The bottle and bean pot are almost absent from this Old Village assemblage, as is the rectilinear design found on later plate rims, a style which is highly developed in the area around the mouth of the Ohio. The "cooking pot" with its small loop handle and nodal elaborations<sup>289</sup> is the most plausible link between this Old Village level and the jars associated with the Macon and Hiwassie foci. In many other ceramic features, however, there are strong differences.

The development of the bean pot in the Trappist and Spoon River foci is concomitant with similar but not identical shapes in late Coles Creek and in Caddoan. The remaining pottery types are analogous to those of Tennessee-Cumberland to the south and east, and to the Mathews focus of the New Madrid area to the south. As Kelly has pointed out,<sup>290</sup> the distinctively shaped copper-covered ear spools from the Powell Mound, are strikingly similar to those from the Grant Mound, Duval County, Florida.<sup>291</sup> This same Florida site produced a specific type of copper "long-nosed God" mask which was duplicated at the Gahagan site.<sup>292</sup> Other specimens bespeak contemporaneity for the Mt. Royal Aspect of the St. Johns and the Gahagan burials. The arrow points and some other cultural items found with the Gahagan burials are clearly Caddoan. Some of the specialized Gahagan artifacts are reminiscent of Hopewellian, but, with the majority of other elements of the culture, they belong to a later time period and are more typical of objects associated with Middle Mississippi. This is indicated by close resemblances of the stone ear spools from Gahagan<sup>293</sup> to those at Aztalan,<sup>294</sup> and the presence of the long ceremonial spud in both places. Two other cultural crossovers are of interest at this point. There were found at

<sup>287</sup> Illustrated in Moorehead, 1929, Pl. X, 2-3; Pl. XII, 3; Pl. XXII, 6.

<sup>288</sup> Moorehead, 1929, Pl. X, 1; XII, 4-5; XX, 6; XXII, 1, 5 and 7; XXXV, a-b, e-i.

<sup>289</sup> Titterington, 1938, Fig. 40. is an example of the early Powell Polished Plain type.

<sup>290</sup> Kelly and Cole, 1931, pp. 332 and 335.

<sup>291</sup> Moore, 1896a, Fig. 38. Note also the Cahokian point from Mt. Royal, Moore, 1894, Fig. 5.

<sup>292</sup> Moore, 1896a, Figs. 39-42c; Webb and Dodd, 1939.

<sup>293</sup> Webb and Dodd, 1939, Pl. 28, Fig. 7.

<sup>294</sup> Barrett, 1933, pp. 350-354.

Gahagan excellently made, specialized, large projectile points having straight to incurving base and strongly convex sides near the base. These are similar to points associated with some of the Copena sites in northern Alabama.<sup>295</sup> Such points were also found at Mineral Springs, Arkansas, with a complex somewhat similar to that at Gahagan.<sup>296</sup> The human effigy pipe from Gahagan<sup>297</sup> is very similar to one found by Kelly at the Guy Smith site in Jackson County, Illinois. It is in a style common throughout Middle Mississippi culture groups. According to Ford the material from the Gahagan site may be associated typologically with Coles Creek and it belongs in the same period.<sup>298</sup>

The small, notched, triangular, projectile point complex of Cahokia and Aztalan is not characteristic of the Cumberland, Moundville, or any of the Middle Mississippi units in the southeast. Old Village does, however, have interesting connections with the Caddoan projectile point complex<sup>299</sup> and with Aztalan. There are also connections with the Plains area where, if the types are not actually in association with Middle Mississippi, they appear most strongly in the Nebraska and Mill Creek aspects. Even farther to the west, the small, triangular, and notched triangular points are found in the late Classic Pueblo sites.

As a working hypothesis I have proposed elsewhere that the Mississippi Pattern influences in the Plains were the results of the movements of specific cultural units from the Mississippi Valley. The first of these is strongly associated, culturally, with sites in the Cahokia region. They moved from there into the Kansas City area. Wedel's brief field report led me to believe that this movement was entirely restricted to the late period of the Monks Mound Aspect whereas later information indicates also, the presence of shapes and designs of the Old Village style resembling the Ramey Incised type.<sup>300</sup> Apparently this actual movement of people modified the eastern section of the Upper Republican giving rise to the Nebraska Aspect. Possibly a slightly earlier or concurrent movement from the Aztalan areas to the west took place, producing, first, the Cambria Focus in south-central Minnesota. Then it moved into western Iowa to become the Mill Creek Aspect. The later Mill Creek sites in South Dakota acquired Upper Republican and some Woodland traits. These sites were, one might postulate, occupied by the pro-historic Ponca and Omaha.

<sup>295</sup> Webb and DeJarnette, 1942.

<sup>296</sup> Harrington, 1920, Pl. CX, CXI.

<sup>297</sup> Webb and Dodd, 1939, Pl. 25.

<sup>298</sup> Webb and Dodd, 1939.

<sup>299</sup> Compare Moorehead, 1928, Pl. XIII, top row 6, 7, 8; Titterington, 1938, Fig. 13 with Webb and Dodd, op. cit., Pl. 28, 1, row 2; and Moore, 1912, Fig. 33 and 131.

<sup>300</sup> Shippee, 1941, p. 28.

The second definite movement of Mississippi culture into the Plains from the east brought that portion of the Oneota Aspect which is attributable to the Iowa, Oto, and Missouri. It has been suggested elsewhere that Oneota developed out of a Woodland culture which was modified by Mississippi.<sup>301</sup> This explanation holds true for Fort Ancient and probably for the Iroquoian Aspect, but there is little or no evidence for such a transition in Oneota. The most likely hypothesis accounting for the origin of Oneota is that it developed from a pre-existing Mississippi culture, the most likely predecessor being the Old Village-Aztalan complex.<sup>302</sup> Possible transitional stages are represented by material from northwestern Illinois obtained by University of Chicago expeditions.<sup>303</sup> It would require no great ceramic shift to produce the Oneota series from the Old Village series, and relative separation from the heart of the Middle Mississippi area might have aided the shift as well as the other changes in material culture.

Mc Kern has been making an intensive study of Wisconsin and related Woodland manifestations, but so far his conclusions have not appeared, although his tentative classification has been published. The chronological relationships of these Woodland groups have not been stated, but at least some of the divisions come into the historic period. In northwestern Wisconsin the Clam River Focus<sup>304</sup> includes sites which are attributed to the Dakota Sioux. Woodland pottery and material in the Keshena Focus is probably proto-historic Menominee.<sup>305</sup>

The Mille Lac and Headwaters Lakes divisions in Minnesota are apparently more closely related to each other than either is to Arvilla and Laurel. Headwaters Lakes appears to be primarily a regional grouping, which has some partial overlap with Laurel and a decided overlap with Mille Lac. The latter, as the Kathio Focus, comes down into the historic period, being part of Dakota Sioux culture. Wilford has suggested that the southern sites of Woodland character in Minnesota tie in closely with certain northern Iowa sites.<sup>306</sup> The material from these sites also has points in common with late Woodland material in Wisconsin and northern Illinois. A connection has been seen between the occurrence of cord-impressed pottery in these sites and its appearance in certain Mill Creek sites<sup>307</sup> and in Mandan. It is also strong in the Sweetwater Focus<sup>308</sup> of Upper Republican.

<sup>301</sup> Ford and Willey, 1941, pp. 256-257.

<sup>302</sup> See also Bennett, 1945, where the material is called the Apple River Focus.

<sup>303</sup> Personal examination of University of Chicago collections, 1939.

<sup>304</sup> McKern, 1936.

<sup>305</sup> Personal communication from W. C. McKern.

<sup>306</sup> Wilford, 1941, p. 247.

<sup>307</sup> Over and Meleen, 1941, pp. 38-42.

<sup>308</sup> Champe, 1936.

In the Plains area, strong cultural influences and actual movement of peoples from the east produced changes which resulted in the shift from the Plains Phase, in its earlier stages, to the proto-historic and historic divisions which have been described by Wedel and Strong.<sup>309</sup> In the interpretation adopted in this paper, divisions of the early Plains Phase which succeeded Woodland groups in the area antedate or at least are not derived from any cultural unit which can be called "Mississippi."

While recent years have seen the identification of different archaeological units as Iowa, Oto, Missouri, Winnebago, Dakota, and perhaps the Quapaw we have not been so fortunate with the majority of the Dhegiha-speaking Sioux. Present leads, however, indicate that the most logical region and archaeological culture for the prehistoric Dhegiha groups is found along the Mississippi from the mouth of the Arkansas to the St. Louis area where late prehistoric Middle Mississippi focal groups are now being differentiated into more meaningful, localized assemblages. When these have been competently characterized we will have an adequate comparative basis to be contrasted with the cultures still to be certainly identified as proto-historic Omaha, Ponca, Kansas and Osage in the central Missouri Valley.

It is decidedly unfortunate that we do not have any modern analytical and interpretive monographs on any Middle Mississippi cultural division. Recognizable areal and temporal units can be identified, but neither the full import of the meaning of these local subdivisions nor their shift into the historic Indian tribes of the Mississippi Valley and the Southeast is understood. The widespread objects associated with a ceremonial cult during a particular period of the existence of Middle Mississippi (1575-1650)<sup>310</sup> colored the interpretation of this division; recognition of the whole, largely obscured local centers. Each interpreter of a particular center possessing the specialized traits had a tendency to derive all of the ceremonial material from his particular culture group be it Etowah, Cumberland, or Moundville. If Spiro had been excavated twenty years ago, it would probably have been interpreted as the culture center for Middle Mississippi. We can look forward to the recognition and definition of specific cultural units, and a chronological arrangement of them, in the Cumberland area, in northern and central Alabama, in northern Mississippi and Western Tennessee, in the lower Arkansas, in the St. Francis Valley, along the Mississippi in the Pecan Point and New Madrid area, in southwestern Illinois, and in western Kentucky. This will match the suggested divisions recently proposed for Monks Mound

<sup>309</sup> Wedel, 1940; Strong, 1940.

<sup>310</sup> It should be emphasized that this late period for the cult does not meet with universal approval.

central Georgia, eastern Tennessee and the forthcoming reports on the Angel and Kincaid sites.

#### FORT ANCIENT

The place of the Fort Ancient Aspect in this general cultural scheme has been discussed at some length.<sup>311</sup> Since the writing of that monograph (1933-39) I have become more sanguine about the possibility of suggesting a genetic connection between part of the cultural content of the Ohio Aspect of Hopewellian and the early Woodland-like Fort Ancient sites. This is coupled with a steadily growing belief that Iroquois developed in the northeast out of a Woodland archaeological culture which was in existence during the Hopewellian period.<sup>312</sup> This shift was to some degree analogous to that from Woodland to Upper Republican, in the Plains, and some of the same influences brought about comparable ceramic treatment throughout the northern Woodland and Iroquois cultures. The early recognizable Iroquois sites show an interesting connection between this earlier Woodland-Hopewellian background and the beginnings of the late southeastern influences which passed up the Ohio, through the Fort Ancient country and also north along the eastern seaboard.

The immediately prehistoric culture in the central Pee Dee drainage of North Carolina was a northern relative of Lamar and has been classed by Coe<sup>313</sup> as the Pee Dee Focus. It is assigned to the period of about 1525-1625. This includes a dominantly complicated-stamp ceramic assemblage and pyramidal mounds and is connected with Irene, Lamar, and at least part of the Etowah occupation. As the result of the comparative analysis of sites assignable to the historic Siouan tribes of the Piedmont of North Carolina and southern Virginia, Coe has been able to recognize a Clarksville Focus and a Hillsboro Focus. The former is located in the drainage of the Roanoke and the Dan and represents the archaeological remains of the Tutelo, Saponi Occaneechi, and the Sara during the period of about 1600-1675. The later towns of the Saponi, Occaneechi, Eno, and Keyauwee, from 1700 to 1725 have lost some of the definite Woodland characteristics of the Clarksville Focus and have taken over some of the traits of the Cherokee, and Muskhogean neighbors to the southwest. Available evidence suggests that in North Carolina, as in Virginia, the Siouan tribes of the Peidmont can be assigned to the Woodland Pattern during at least 1550-1650.

Remains of their Algonkian neighbors to the east and north are now being segregated into units which will permit the allocation of specific tribal

<sup>311</sup> Griffin, 1943a.

<sup>312</sup> Griffin, 1944a.

<sup>313</sup> Personal communication from Joffre Coe.

units to specific archaeological divisions. As the result of a recent study, Karl Schmidt<sup>314</sup> has suggested the grouping of Moyaone and Patawomeke into the Potomac Creek Focus, which is a southern expression of the same cultural influences which produce the Owasco Aspect to the north.

### PHYSICAL TYPES OF THE EASTERN UNITED STATES

So far, there has been little or no mention in this paper of the physical type of the inhabitants of the eastern continental area.<sup>315</sup> The data have been presented in terms of the historical development of demonstrable culture complexes. Until we can speak of the physical types associated with specific archaeological units we are not justified in interpreting archaeological similarities as the result of migration of people except in such cases as that of the Oneota. Happily, the time is passing when physical anthropologists attempt to segregate material on the basis of physical type alone, regardless of the time factor, and archaeological association, or to pool all material into one unit on the basis of modern state boundaries. The historical importance of a valid variety or type in an area depends on its recognition as a biological entity at a particular moment of time and its persistence through time in association with specific cultural complexes.

Various groupings of physical types have been suggested by different authors and these will be modified as new information is gathered. It is generally accepted that a low, dolichocranial type was among the earliest migrants to America, and the "marginal location" of these finds in lower California, and on the Texas coast<sup>316</sup> has been used as contributory evidence for this opinion. If this hypothesis is true, we should expect to find this physical type in the continental, nonmarginal areas associated with a demonstrably old archaeological culture.

There are specific physical divisions now in process of definition within the great body of skeletal material that can be called Sylvid, and they can be allocated to archaeological cultures and time periods. For one of these, the term Indian Knoll type is suggested because of the large body of relatively homogeneous skeletal material from a culturally homogeneous site.<sup>317</sup> At present, the numerical dominance of this type is in the Southeast from the Baumer Focus of southern Illinois to the Copell Focus of Louisiana, and includes the majority of the skeletal material associated with the Paleo-Indian.<sup>318</sup> Closely related skulls have been attributed to early levels in Cali-

<sup>314</sup> Unpublished M.A. thesis, University of Chicago.

<sup>315</sup> This section has been written with the aid of Georg K. Neumann, of the Department of Zoology of Indiana University.

<sup>316</sup> Rivet, 1909; Oetteking, 1930; Woodbury, 1935.

<sup>317</sup> Von Bonin and Morant, 1938.

<sup>318</sup> Hrdlicka, 1927; Newman and Snow, 1942.

fornia,<sup>319</sup> in the Southeast,<sup>320</sup> and possibly in New England. How long this type persisted and its disappearance, change, or amalgamation are unsolved problems, but possible answers may be found in an analysis of material from early Mississippi populations in western Tennessee and eastern Arkansas.

A third Sylvid type can be called the Gooden type, which has been recognized as a population in the Maples Mills Focus<sup>321</sup> of Illinois. This is the Algonkian type of Hrdlicka. In contrast to the general southern position of the Indian Knoll type, the Gooden type is most strongly represented in the north. It is at least as early as the early Woodland cultures of Illinois,<sup>322</sup> early Effigy Mound groups in Wisconsin, Marksville, and Adena-Hopewell in Ohio.<sup>323</sup> This physical type persists in the northeast into the historic period where it is the major element in the Central Algonkian group, the Delaware, Seneca, and the Powhatan Confederacy. It is also strongly represented in the population of the northern Fort Ancient sites,<sup>324</sup> in the Lake Winnebago Focus of Oneota, and in the Piedmont Siouan groups.<sup>325</sup>

There is another element in the northern Sylvid population from early Minnesota Woodland sites, distributed primarily north of the Great Lakes east to New England. It may constitute an additional type. The existence of this early, relatively low-vaulted group as an inbreeding entity has not been satisfactorily established for the northern area.

Brachycranial elements have their earliest appearance at Frontenac Island<sup>326</sup> (a site of the Laurentian Phase) in Adena sites in Kentucky,<sup>327</sup> Copena in northern Alabama, and in the Ogden-Fettie Focus of Illinois Valley Hopewell. We are, however, not certain how closely the early brachycranial elements are related to the later Centralid types, for in facial attributes some of the former more nearly approach the Sylvid type. During the development of the cultures known as Mississippi, Centralid physical types become dominant throughout the Southeast. These are variants of the same variety which forms the major portion of the population of the Developmental and Great Pueblo periods in the Southwest. A specialized local type of Centralid is found in late Fort Ancient sites such as Madisonville,<sup>328</sup> and in the population of the stone graves in the Nashville area. Throughout the Southeast, the basic Centralid type (Gulf type of Hrdlicka) has been called the Koger's Island type.<sup>329</sup> It is found from Florida to the Spoon River Focus<sup>330</sup> and from

<sup>319</sup> Dixon, 1923, pp. 401-402.      <sup>320</sup> Collins, 1941a.

<sup>321</sup> Neumann, 1941b.      <sup>322</sup> Neumann, 1937 and 1941a.

<sup>323</sup> Willoughby and Hooton, 1922.      <sup>324</sup> Neumann, 1942b.

<sup>325</sup> Neumann, n.d.      <sup>326</sup> Personal communication, W. A. Ritchie.

<sup>327</sup> Hertzberg, 1940; Snow, 1941.      <sup>328</sup> Hooton and Willoughby, 1920.

<sup>329</sup> Newman and Snow, 1942.      <sup>330</sup> Neumann, 1941b.

Caddoan sites to those attributed to the Cherokee.<sup>331</sup> Ethnic groups clearly representative of this type include the Choctaw, Natchez, and Caddo. Mixed populations of Centralid and Sylvid are to be found in such groups as the Shawnee, Menominee and the Creeks.

Neumann has recently proposed a trihybrid origin for the Indians of the plains area.<sup>332</sup> In his northern Prairids (Hrdlicka's Siouan type) he places such tribes as the Crow, Dakota, Arikara and part of the Cheyenne. The Southern Prairid type is best known as the dominant element in the Osage, and is also found in the Kansas and Wichita.

The relationship between physical type, cultural groups and language in the eastern United States is still imperfectly understood but enough evidence has been gathered to promise in some instances definite conclusions regarding the problems of migration and diffusion. The replacement of Indian Knoll and other Sylvid types in the Southeast by Centralids definitely indicates a major movement lasting over a considerable period of time. Specific movements from the Southeast of this type were into the Fort Ancient area, into southern Indiana, Illinois, southern Wisconsin, and up the Missouri Valley into the central Eastern Plains. In the north, some continuity in both physical type and culture is indicated for the Algonkian and Iroquoian groups.

Readers of this section should again be reminded of the hypotheses and concepts presented in the introductory pages for they have influenced the interpretation of the data as presented herein, at least as much as the data suggested in the hypotheses. This paper should be compared with other recent interpretations<sup>333</sup> and with those which will inevitably improve upon the ones now in print.

UNIVERSITY MUSEUMS  
ANN ARBOR, MICHIGAN.

<sup>331</sup> Stewart, 1941; Lewis and Kneberg, 1941.      <sup>332</sup> Neumann, 1942a.

<sup>333</sup> Setzler, 1940; Ford and Willey, 1941; Cole, 1943; Lewis, 1943.

# ARCHAEOLOGICAL MANIFESTATIONS AND RELATIVE CHRONOLOGY IN THE NORTHEAST

WILLIAM A. RITCHIE

THE northeastern area, considered arbitrarily as the vast region embraced between the Mississippi River and the Atlantic Ocean, the Ohio River east to Delaware Bay on the south, and Hudson Strait on the north, has obviously no claim to unity on a physiographic, biotic, or linguistic basis. Moreover, only in a restricted sense has it a cultural integrity, in that it coincides with the intensive distribution of what has somewhat vaguely been termed the Woodland Pattern, recently given a more definite configuration through the work of the Woodland Conference, held at the University of Chicago in May, 1941, under the leadership of W. C. McKern. Inasmuch as the assembled data, while not complete for all portions of the territory comprehended in the northeastern area as here defined, has been published,<sup>1</sup> no attempt will be made to outline the general basis of the pattern. Our prime purpose is boldly to define in historical perspective the salient archaeological manifestations of the area, a task hampered by paucity of detailed information for several of its important sub-divisions and the frequent lack of means for accurately interrelating and chronologically correlating cultures as far separated spatially as the western Great Lakes and the Atlantic littoral.

We are confronted, in approaching the subject, with a welter of culture aggregates and given sporadic glimpses of depth perspective. There are numerous suggestions of scattered nodes of influence; of movements and countermovements; of contacts, diffusions, and acculturations; of continua with change; of replacements and of survivals in relative isolation. The sum of our knowledge is, however, still unequal to the formulation of any valid scheme of correlation for the entire area, although for particular regions the succession of events emerges with considerable clarity.<sup>2</sup>

So, while we must forego any attempt to construct a fabric of whole cloth, the substituted product is presented as something more than a fabrication of hypotheses, since it has a reasonably solid basis of stratigraphically supported and qualitatively elaborated material, the result of carefully conducted excavations here and there over the area.<sup>3</sup> By eschewing strict

<sup>1</sup> Woodland Conference, 1943.      <sup>2</sup> Ritchie, 1944.

<sup>3</sup> See, for example, site reports in Ritchie, 1944.

systematization we may mitigate in fair measure "the constant danger," cautioned against by Sapir, of creating "historical or psychological actualities out of merely conceptual abstractions."<sup>4</sup>

Attempts to employ the direct historical method of discussing cultural units in a two dimensional sequence have thus far produced very limited results, since but few archaeologically identified manifestations have penetrated to the historic level. In fact, only for the Labrador Eskimo and the Iroquois have archaeological antecedents been established with certitude. While it is extremely likely that many of our indubitably late prehistoric cultures pertain to certain Siouan<sup>5</sup> and Algonkian<sup>6</sup> peoples, such connections have not yet unequivocally been made through the intermediacy of documented sites, whose rarity is ascribable to two main factors, viz., the rapid rate of acculturation following European exploration, and the destruction of aboriginal settlement sites, particularly along the Atlantic seaboard, by urban and industrial expansion. The location and study of early contact period stations is one of the most important tasks awaiting eastern archeologists.

It seems, however, permissible to regard the historic tribes as termini of a continuum embedded, for the most part, in the still ethnically undeciphered matrix of antiquity, doubtless in many cases not situated within the recorded tribal territory.<sup>7</sup> The large unassignable archeological remainder we must endeavor to relate according to the Midwestern Taxonomic Method, supplemented by stratigraphic evidence.

In general, it appears that that portion of the northeastern area lying east of the state of Ohio is peripheral to the great triangular territory created by the Ohio and Mississippi rivers and the western Great Lakes. Into this central reservoir there filtered from various quarters, successive population and culture waves, of decidedly diverse complexion, which, trending eastward, in most cases ultimately reached the coast. "Qualitative differentiation followed by interchange in all directions," to employ Lowie's words,<sup>8</sup> doubtless operated to modify continually the trait complexes.

The most recent cultural infiltration, up the broad Mississippi corridor, was responsible for the more or less specific pattern known as the Mississ-

<sup>4</sup> Sapir, 1916, p. 38.

<sup>5</sup> Griffin, 1937b, 1937a; Wilford, 1941, pp. 237-238; McKern, W. C. for Wisconsin, tentatively identifies the Lake Winnebago Focus with the Winnebago, the Clam River Focus with the Dakota, and the Oneota Aspect with the Chiwere Sioux, personal communication, Nov., 1941.

<sup>6</sup> McKern, W. C., provisionally identifies the Keshena Focus of Wisconsin with the Menominee, personal communication, Nov., 1941.

<sup>7</sup> Speck, 1926, pp. 301-303.      <sup>8</sup> Lowie, 1940, p. 414.

sippi, which attained its most northerly known development in the Oneota Aspect and its most easterly in the Iroquois. Still earlier, the Woodland Pattern apparently spread over the area from a center in the upper Great Lakes region, as McKern has pointed out, but whether its basis was an immigrant Asiatic complex, as he postulates,<sup>9</sup> or resulted from the union of various Archaic strains fertilized by the addition of pottery and other elements from the south, is not yet amply clear.<sup>10</sup> In the southern sector of this central area, too, there emerged, prior to the Woodland apogee, but still within the Woodland time period, the elaborate Adena-Hopewellian complex, of still obscure etiology, involving evidently the reintegration of northern and southern elements and traditions. Here and there over the area are also found islands of a still older occupation on the hunting level; and vestiges of an even more remote inhabitance may be present in the deeply buried fish-weir of Back Bay, Boston,<sup>11</sup> the flints recently reported by Greenman from old strand lines of northern Lake Huron,<sup>12</sup> and the sporadically distributed fluted or Folsom points.<sup>13</sup>

Thus, in effect, we may comprehend a stratified series of general culture platforms, in most cases compounded of several discrete manifestations having fundamental mutual affinities which differentiate them in varying degree from manifestations on other time levels. Without exception these aggregates cut across the arbitrary confines of the northeastern area, indeed, one of them, the Mississippi Pattern, is better developed outside it. This viewpoint accords with that recently expressed by Ford and Willey in their wider survey of the eastern United States.<sup>14</sup> It should be clearly emphasized that rigid time delimitations are not implied, some manifestations spanning at least partially more than a single temporal horizon. Also, in the main, a thread of continuity prevails throughout the entire series.

On turning now to a closer scrutiny of the respective levels prior to the dawn of the historic period we perceive a protohistoric and late prehistoric time span of locally variable length, possibly two or three centuries over most parts of the area, generally characterized by large semipermanent settlements; intensive horticultural economy; vigorous ceramic art; well

<sup>9</sup> McKern, 1937, pp. 139-140; pp. 142-143.

<sup>10</sup> Jenness, (1940, p. 13), regards the absence of pottery from the Upper Mackenzie and Yukon valleys as a serious obstacle to the former view. On the other hand, Woodland pottery seems clearly to have a northern genesis and doubtless preceded horticulture in the Northeast. This view is shared by Linton (1944).

<sup>11</sup> Willoughby, 1935, pp. 6-10; Johnson, et al., 1942.

<sup>12</sup> Greenman and Stanley, 1941, pp. 305-313.

<sup>13</sup> Howard, E. B., 1935, pp. 114-123; Roberts, 1940, pp. 51-116.

<sup>14</sup> Ford and Willey, 1941, pp. 325-363.

developed bone industry; relatively limited work in stone; and, over the southwest portion of the area, large domiciliary earth structures, often combined with fortifications or, as in the Iroquois domain, earthen enclosures alone. The marked preoccupation with mortuary matters, found in the preceding period, was generally lacking. These diagnostic features plainly bespeak the dominance of Mississippi groups, which over much of the northeast came to overlay and tincture the Woodland stratum, whose last stronghold, as might be anticipated, persisted on the northern and eastern margins of the area, as in the Mille Lacs and Headwaters Lakes Aspects of Minnesota,<sup>15</sup> Wolf River Aspect of Wisconsin,<sup>16</sup> and the Canandaigua Focus of New York, northeastern Pennsylvania and New Jersey.<sup>17</sup> The acculturizing effects of this Mississippi influence came to be markedly discernible, mainly in ceramics, in such late Woodland cultures as the Maples Mills Focus of Illinois,<sup>18</sup> Younge Focus of Michigan,<sup>19</sup> Monongahela Aspect of west central Pennsylvania,<sup>20</sup> Castle Creek Focus of eastern New York and adjacent sections of Pennsylvania and New Jersey,<sup>21</sup> as well as in the later or Clasons Point Focus of the Coastal Aspect, spread along the Atlantic littoral from northern New Jersey probably into Maine.<sup>22</sup>

In all likelihood this period witnessed the effulgence of such great northern Mississippi centers as the Angel mounds in Indiana,<sup>23</sup> Cahokia in Illinois,<sup>24</sup> and Aztalan in Wisconsin,<sup>25</sup> all probably of the Middle Phase; marked the heyday of the Oneota<sup>26</sup> and Fort Ancient aspects;<sup>27</sup> and encompassed the synthesis of basic Iroquois culture, all referable to the Upper Phase of the same pattern.

Perhaps only a few centuries prior to this time, near the end of a relatively long period which we may designate as intermediate between the late prehistoric and the archaic, the climax of Woodland development was achieved in the Rainy River and Red River aspects of Minnesota,<sup>28</sup> both mound producing; in northern Ohio's Glacial Kame culture and the Intrusive Mound complex<sup>29</sup> farther south in the same state; as well as in the Point

<sup>15</sup> Wilford, 1941, pp. 237-240.

<sup>16</sup> McKern, W. C., personal communication, Nov., 1941.

<sup>17</sup> Ritchie, 1936a; 1938b, pp. 98-100; 1944, pp. 29-57, 74-100; 1946.

<sup>18</sup> Cole and Deuel, 1937, pp. 15, 20, 191-198, 203.

<sup>19</sup> Greenman, 1937.      <sup>20</sup> Butler, 1939.

<sup>21</sup> Ritchie, 1934; 1938b, pp. 98-100; 1944, pp. 29-71.

<sup>22</sup> Skinner, 1919, pp. 75-120; Ritchie, 1938, pp. 103-106; 1944, pp. 102-104; Hadlock, 1939, pp. 23-24.      <sup>23</sup> Lilly, 1937, pp. 41-48; Black, 1942, pp. 34-43.

<sup>24</sup> Moorehead, 1929.      <sup>25</sup> Barrett, 1933.      <sup>26</sup> Keyes, 1937, pp. 5-7.

<sup>27</sup> Griffin, 1935; 1937b, pp. 273-276.

<sup>28</sup> Wilford, 1941, pp. 240-243.      <sup>29</sup> Mills, 1922a, pp. 563-584.

Peninsula Focus of southwestern Ontario and western New York,<sup>30</sup> whose attenuated influence, incidentally, radiated to the seaboard.<sup>31</sup> All these correlate generally in content and evidently in time. They also apparently overlap with the still earlier Hopewellian span, reflecting in varying amounts the brilliance of this culture and its involved mortuary measures, but oddly enough they lack its mound-making proclivities, except as noted.

Of approximate contemporaneity, hence within the intermediate period, but of separate genesis is the older or Throgs Neck stage of the relatively isolated Coastal Aspect, distributed with significant regional differences from the Maritime Provinces at least to Delaware Bay.<sup>32</sup> While the later stage of the aspect exhibits Mississippi (Owasco and Iroquois aspects) modifications, as already stated, and may persist into historic times, the roots of the older phase were strongly nourished by Laurentian traditions. The presence of the grooved axe, shell tempered pottery<sup>33</sup> and other elements, also suggests influences from the south. Provisionally of the early intermediate horizon is the recently discovered Orient Focus, confined thus far to eastern Long Island, New York, and known only from four burial sites.<sup>34</sup>

Still within this lengthy intermediate period the advanced Woodland cultures fade into the underlying and apparently stimulating Hopewellian-Adena phases of still anomalous but suggestive Woodland pattern. From major focal centers in southern Ohio and the Illinois Valley the former phase ramified into regions far and near and established contacts with many remote parts of the United States.<sup>35</sup> By current consensus the Adena Phase preceded the Hopewellian and doubtless contributed to its formation.<sup>36</sup> Differentia indicative of Adena relationship characterize occupations widely scattered over the northeast, as the pre-Hopewellian Red Ochre Phase of Illinois,<sup>37</sup> the Middlesex Focus, which has been traced from northwestern Pennsylvania and southern Ontario across New York and New

<sup>30</sup> Ritchie, 1937, pp. 188-194; 1938, pp. 100-102; 1944, pp. 115-186.

<sup>31</sup> Skinner, 1909, p. 14.

<sup>32</sup> Skinner, 1919, pp. 51-74; 1920a; Smith and Wintemberg, 1929; Cross, 1941.

<sup>33</sup> The occurrence of shell tempered sherds in an evidently early midden on Manhattan Island may indicate the independent development of this trait in the northeast (See Skinner, 1920a, pp. 133-134).

<sup>34</sup> Excavated by Messrs. Charles F. Goddard and Roy Latham (See Ritchie, 1944, pp. 227-235).

<sup>35</sup> Setzler, 1940, pp. 258-268; Ford and Willey, 1941, pp. 334-342.

<sup>36</sup> Lilly, 1937, p. 28; Quimby, 1941, pp. 144-147; Griffin, 1942, pp. 356-357.

<sup>37</sup> Cole and Deuel, 1937, pp. 58-69, 89-90, 202.

England.<sup>38</sup> No mounds, however, are known from the Middlesex Focus, but a rich panoply of burial offerings is often present, together with liberal quantities of powdered hematite. This substance, likewise, had an important role in the succeeding Hopewellian, Point Peninsula, and cognate cultures, all known to us principally as elaborate mortuary complexes.

Probably encroaching upon the lower Adena horizon are the early manifestations of the Woodland Pattern comprehended under the Black Sand and Morton foci of Illinois<sup>39</sup> and the nascent Effigy Mound Aspect in northern Wisconsin.<sup>40</sup> The subsequent development and expansion of the latter over the whole of Wisconsin and adjacent parts of Minnesota, Iowa, and Illinois seem to have coincided with the Hopewellian occupation of the same states. The undeniable Woodland constituents of Hopewellian present further proof of the preexistence of the Woodland Pattern, and the sporadic outcrop of Woodland wares in the indubitably earlier Laurentian Aspect<sup>41</sup> constitutes still further testimony of this order. Indeed, with considerable justification, the Hopewellian Phase, and by implication the Adena as well, have been referred to the Woodland Pattern.<sup>42</sup> The excavation of other large Hopewellian habitation sites, like the Turner site,<sup>43</sup> would presumably do much to resolve this question.

Thus far we have been concerned with pottery making cultures, many of which probably also had a horticultural base. But well disseminated over the area are ample traces of peoples with diversified material equipment possessing a non-ceramic and probably pre-ceramic and pre-horticultural economy, predicated on hunting, fishing, and gathering. This Archaic Pattern, like its successors, has been traced well beyond the limits of the area; in fact the Shell Mound Culture in southeastern Indiana,<sup>44</sup> is marginal to a center in Kentucky.<sup>45</sup> This does not, however, necessarily imply a southern origin for the Archaic Pattern. Contrary to Ford and Willey,<sup>46</sup> the drift was probably southward from the central Canadian forests, local areas of specialization developing in naturally favored regions and expanding therefrom.

<sup>38</sup> Wintemberg, 1928a, pp. 175-199; Willoughby, 1935, pp. 81-86; Ritchie, 1937, pp. 186-187; 1938a, pp. 101-102; 1944, pp. 186-200.

<sup>39</sup> Cole and Deuel, 1937, pp. 69-75; 135-145, 204-206, 145-150, 200-205.

<sup>40</sup> McKern, 1928; 1930; personal communication, Nov., 1941; Wilford, 1941, p. 237.

<sup>41</sup> Ritchie, 1940b, pp. 47-50, 85-86, 88-89, 91.

<sup>42</sup> Cole and Deuel, 1937, pp. 202-203.

<sup>43</sup> Willoughby, 1922.

<sup>44</sup> Lilly, 1937, pp. 100-101.

<sup>45</sup> Moore, 1916, pp. 431-487.

<sup>46</sup> Ford and Willey, 1941, Figs. 2-6.

In the extreme northeast an aspect of the Archaic horizon, known as the Laurentian,<sup>47</sup> apparently attained its maximum intensity in a regional efflorescence centering in Maine, which has been called the Red Paint culture, due to its lavish use of powdered hematite with caches of stone artifacts thought to mark burial loci in which the osseous material has decayed.<sup>48</sup> Recent excavations in the Taft's Point and Waterside shell heaps, on Frenchman's Bay, Maine, suggest that this complex, without pottery, underlies perhaps two later levels of ceramic Shell Heap culture,<sup>49</sup> tentatively identifiable with stages of the Coastal Aspect farther south. But that some of the local middens represent habitation sites solely of the Red Paint people was shown by investigations in the Nevin site at Blue Hill.<sup>50</sup> Moreover, here a sprinkling of rude Woodland ware occurred throughout the deposit. At Vergennes, Vermont, pottery was also present everywhere in a thin, occupied Laurentian zone,<sup>51</sup> while in New York such sites are either non-ceramic or, where the refuse is deep, produce occasional Woodland type sherds in the upper level only.<sup>52</sup> There exists in New York also, a stratigraphic proof of the priority of the Archaic occupations to the Point Peninsula culture, of the intermediate period.<sup>53</sup> Deeply corroded copper implements, typologically similar to still culturally unattributed forms common in the Wisconsin region, have been unearthed from these New York Laurentian stations,<sup>54</sup> while sporadic surface finds of gouges, plummets, and ground slate points, all diagnostic Laurentian forms, as far west as Wisconsin, indicate direct or indirect connections. Moreover, copper parallels for eastern Laurentian slate points and semilunar knives are not rare around Lake Superior, and bone prototypes have been suggested for both of these stone and metal forms.<sup>55</sup> Eskimo analogies have also been pointed out,<sup>56</sup> and according to an hypothesis recently elaborated by Spaulding, both may be derived from a common parentage of Asiatic origin.<sup>57</sup> On this assumption the basic Laurentian complex should be traceable through the coniferous forest belt of Canada into a similar ecological milieu in Siberia. Some evidence already exists for the distribution of such

<sup>47</sup> Ritchie, 1938b, pp. 106-108; 1940b; 1944, pp. 235-257.

<sup>48</sup> Willoughby, 1898; 1915; Moorehead, 1922b, pp. 9-150.

<sup>49</sup> Hadlock, 1939; Rowe, 1940.

<sup>50</sup> Byers, Douglas S. and Johnson, Frederick, personal communication.

<sup>51</sup> Bailey, 1939.      <sup>52</sup> Ritchie, 1940b.

<sup>53</sup> Ritchie, 1944, pp. 160-166, 276, 287.      <sup>54</sup> Ritchie, 1940b, pp. 44-46, 78-79.

<sup>55</sup> Linton, Ralph; personal communication. A possible example is illustrated in Ritchie, 1940b, Plate XXIX, 23.

<sup>56</sup> Beauchamp, 1897, p. 65; Parker, 1922, pp. 79-83; Strong, 1930, pp. 126-144.

<sup>57</sup> Spaulding, Ms., pp. 140-155.

a pattern across the boreal zone of the Old World into Scandinavia.<sup>58</sup> An earlier north European level is without pottery, but the ware which occurs later in a congruent context has all the earmarks of Woodland ceramics. One is tempted by this fact to harmonize Spaulding's and McKern's hypotheses in a plausible explanation for both the pre-ceramic Laurentian manifestation and the subsequent introduction of a substantially similar overlay containing Woodland pottery. Finally, it should be remarked that the Laurentian may conform to the postulated basic ice-fishing culture of Birket-Smith,<sup>59</sup> and to the paleo-Algonkian stratum, so convincingly argued for by Speck,<sup>60</sup> except that a marked brachycephalic factor evidently characterized the Laurentian population. This physical element of the Algonkian north of the St. Lawrence may be much older in the Wabanaki territory south of the river than previously suspected;<sup>61</sup> in fact it may have been submerged and overlain by a second infiltration of long-heads, observed in the late prehistoric and recent populations of the northeast. It should be added, however, that the earliest distinguished people, at least in the New York area, viz., the bearers of the Lamoka culture, were dolichocephals.

A partial overlap of the Laurentian Aspect and distinctive preceding Lamoka Focus, also of the Archaic Pattern,<sup>62</sup> is convincingly shown in the mixed congeries of the Frontenac Focus, brought to light in central New York in 1939 and 40.<sup>63</sup> The broader affinities of Lamoka seem to be with the Shell Mound culture of Indiana,<sup>64</sup> Kentucky,<sup>65</sup> Tennessee,<sup>66</sup> and Alabama,<sup>67</sup> but in this manifestation,<sup>68</sup> as in the basal level of the Stalling's Island mound, Georgia, not a few Laurentian traits are also present,<sup>69</sup> raising the suspicion that some degree of fusion of the two cultures had taken place prior to the diffusion of the Archaic wave of occupation into the south. However, that Lamoka and Laurentian are separate facies of the Archaic cannot be doubted on the evidence from New York.

<sup>58</sup> Spaulding, Ms., pp. 147-149.

<sup>59</sup> Birket-Smith, 1937a, pp. 296-302.

<sup>60</sup> Speck, 1926, p. 309.

<sup>61</sup> Speck, 1926, pp. 309-311.

<sup>62</sup> Ritchie, 1932b; 1936b; 1938b, pp. 108-109; 1944, pp. 292-310.

<sup>63</sup> Ritchie, 1944, pp. 273-292; 1945.

<sup>64</sup> Lilly, 1937, pp. 100-101; Miller, 1941.

<sup>65</sup> Moore, 1916, pp. 431-487; Webb and Haag, 1939; 1940.

<sup>66</sup> Webb, W. S., 1938, pp. 25-32, 126-128, 128-130.

<sup>67</sup> Webb, W. S., 1939, pp. 21-23, 34-43, 80-83; Webb and DeJarnette, 1942, pp. 41-43, 58-79, 81-91, 93-132, 132-142, 142-146, 178-208, 208-212, 235-266, 266-268, 306-319, 403-428.

<sup>68</sup> Haag, 1942a, pp. 209-214, 219-222.

<sup>69</sup> Clafin, 1931; Fairbanks, 1942, pp. 223-231.

A brief recapitulation, in inverted order, of the archaeological record for the northeastern area, as reconstructed from the available data, may now be given. We note first that the main sequence is amenable to extension to parts of the surrounding territory of the southeast and eastern plains. Furthermore, it seems feasible to distinguish several broad time zones, each with certain generally congruent culture paradigms, between some of which short continuities are traceable. Single and multiple trait persistences, with and without modifications, are also to be noted between successive time zones and indeed, this was doubtless a major process in the shaping of cultures on all levels. Still, the strong individual cast, the differential diagnostic artifact assemblages, and the diversified burial customs and cranial types exhibited even among cultures of the same area and general time zone, as for example the Lamoka and Laurentian in New York state, can be invoked to prove that innovation through actual migration cannot be eliminated as a factor.

Discounting the more debatable pre-Archaic occupations, our first clear evidence is for a relatively long archaic epoch, with abundant widely disseminated remains, perhaps encompassing the early centuries of the Christian era, perhaps in part even older. The primary manifestations of this occupation comprise a relatively simple non-horticultural culture, without pottery, metal and smoking pipes, which was carried by a dolichocephalic folk. This has a known distribution from lower Ontario to Alabama, and in the north at least, an eastward spread almost to the coast. The remarkable stability of the two principal subdivisions, the Lamoka Focus in the north, the Shell Mound culture in the south, suggests a long and nearly perfect isolation. On the strength of the physical type and the economic background we may even be justified in suspecting some ultimate connection between these eastern Archaic occupations and the Basket Maker groups of the southwest.

The Canadian forests apparently sent forth a second quite different physical and cultural alliance on the heels of the Lamoka contingent, a brachycephalic people equipped with stone gouges, ground slate cutting tools, plummets, and bone harpoons, who, in our postulated Archaic time period, worked their way southward from the Maritimes and St. Lawrence valley into New England, New York, and in diminishing numbers much farther south. Miscegenation with their long-headed predecessors seems graphically shown in the Frontenac Island burials in central New York.<sup>70</sup> Important elements of both occupations are to be found in the basal level of Stalling's

<sup>70</sup> Ritchie, Ms., 1945.

Island, Georgia, and in the middens of the Shell Mound culture, but in New York unmixed sites of both have been excavated, as well as mixed stations like Frontenac Island.

The multitudinous types of large, roughly chipped cutting implements of the Laurentian foreshadow early Woodland tools, while the broad corner-notched points, plummets, ground wolf mandibles, and extended and cremated burials with accompaniments, characteristic of the Laurentian and Frontenac cultures, may be possible Hopewellian prototypes. The cord malleated and even dentate stamp ornamented wares, pertaining to elongated, straight or nearly straight-sided vessels with conical bases, found on certain Laurentian sites, particularly in the upper level, are undeniably early Woodland, while the rare rocker stamped sherds again have analogies in the doubtless later Hopewellian.

Early coastal Woodland cultures, too, are reared upon a Laurentian platform, bolstered by increments from the southern Atlantic littoral, as revealed by New England and New York shell heaps and inland sites.

The Adena-Hopewellian and cognate manifestations, as well as post-Hopewellian cultures like the Intrusive Mound and Point Peninsula, are obviously complexly interrelated developments pertaining to a single, broad, time sphere succeeding the Archaic. Their genesis evidently involves Woodland antecedents fecundated by concepts and elements of southern Mississippi derivation, probably in part ultimately stemming from Mexico and Middle America. What is most clear, however, is the derivative nature of these cultures in the northeast proper, i.e., east of Ohio, where elsewhere, they precede the Mississippian group.

It is possible that the late Woodland manifestations of the northeast represent in part decadent emergents from the prolific cultures of the intermediate period, subsequently activated by Mississippi influences, even as significant Woodland constituents in the later formative Iroquois Aspect, Mississippi Pattern, can now be demonstrated.

ROCHESTER MUSEUM OF ARTS AND SCIENCES  
ROCHESTER, NEW YORK.

# THE IMPORTANCE OF THE ESKIMO IN NORTHEASTERN ARCHAEOLOGY

FREDERICA DE LAGUNA

**I**F A PREHISTORIC Canadian Eskimo took a ride on H. G. Wells' "time machine" and visited one of our eastern museums he would see much that was familiar in the archaeological Indian collections from the Northeast. Not only would some of the ground slate blades be like those which he used to make, but he would feel at home with a number of bone and chipped flint artifacts. Some of these he shares with the Indians because both he and they derived them from that ancient substratum, called by Birket-Smith the Ice-hunting horizon,<sup>1</sup> which underlies all the northern cultures in the Old and the New World, from Greenland to Lapland. Among these shared traits are probably the bone awl and the bone wedge, the chipped end-scraper, the chipped leaf-shaped blade with rounded or pointed base or plain tang, the three-pronged fish spear, and the spear thrower. Some of these, like the awl and the scraper, have remained practically unmodified since the Ice Age; others, like the spear thrower, have been given distinctive forms by each culture or family of cultures that has used them.

Other types would be familiar to our Eskimo visitor because they had been borrowed, either by the Indians from the Eskimo, or by the Eskimo from the Indians. It is these borrowed traits that I propose to discuss.

The Dorset culture<sup>2</sup> is not only the oldest known Eskimo culture in the eastern Arctic, but it is also, I believe, the Eskimo culture primarily concerned in this give and take. It was flourishing in northeastern Canada when the Thule Eskimo<sup>3</sup> arrived from Alaska, an event which took place about A.D. 800, if I may be permitted to give a rashly definite expression to a vague guess as to time. Between A.D. 800 and 1000 the Thule and Dorset people lived side by side, trading. Then the Dorset were swamped, disappearing from some areas, and in other places mingling with the Thule to form the basis for modern Central Eskimo culture.

The Thule Eskimo were Alaskan in origin, having sprung, in the main, about A.D. 500, from the Birnirk of Point Barrow.<sup>4</sup> The Birnirk, in its turn, probably developed about the beginning of our era from the Old Bering

<sup>1</sup> Birket-Smith, 1929, II, p. 216; Birket-Smith and de Laguna, 1938, p. 517.

<sup>2</sup> Jenness, 1925; Wintemberg, 1939-1940; Rowley, 1940. For a general summary of the place of Dorset culture, see Collins, 1940.

<sup>3</sup> Mathiassen, 1927.      <sup>4</sup> Mason, J. A., 1930.

Sea culture,<sup>5</sup> or at least from something closely related to it. Beyond this point, the past is hidden.

About A.D. 500, when the Thule culture was still in its infancy, the Dorset people were established in Arctic Canada, and may even have been colonizing Greenland. About A.D. 900 the Thule Eskimo followed the Dorset eastward into Greenland, mingled with them and overwhelmed them, and finally founded the Inugsuk culture which flourished in West Greenland during the Middle Ages. Contact between the Inugsuk Eskimo and the Norsemen about A.D. 1300 gives us one clear date by which to fix this sequence.<sup>6</sup>

But when was the first appearance of the Dorset in the East? This we cannot answer, although features linking the Dorset with Old Bering Sea and with Kachemak Bay I—the oldest Eskimo stage in Southwestern Alaska<sup>7</sup>—suggest that these three ancient cultures were at comparable stages of development. I agree with Collins<sup>8</sup> that they were roughly contemporaneous, but I dare not attempt a definition of this rough contemporaneity.

Sites yielding Dorset specimens, marked with arrows on the map (Fig. 8), are spread over thirty degrees of latitude.<sup>9</sup> Most of these are not pure Dorset: some were Thule but had Dorset trade pieces; some were originally Dorset but were occupied by later peoples; some, especially in Greenland and Labrador, were places where Dorset chipped stone types lingered on into recent times. A number of the richest, unfortunately, were dug by Eskimos, "who did not separate the objects from different sites or from different layers of the same site . . . [but] jumbled everything together into bags."<sup>10</sup> There is therefore some uncertainty as to just what belongs to the Dorset culture, although the Newfoundland sites excavated by our beloved and regretted Wintemberg, and that near Iglulik, dug by Rowley, in the main confirm Jenness' original deductions. There are, of course, differences between the contents of these sites, due to differences in age, environment, season of occupation, and external culture contacts.<sup>11</sup> We know that these differences exist, although we cannot yet formulate them.

<sup>5</sup> Collins, 1937.      <sup>6</sup> Mathiassen, 1930, esp. pp. 284–303.      <sup>7</sup> de Laguna, 1934.

<sup>8</sup> Collins, 1940, pp. 566, 571 f. Various estimates for dating these main stages in Eskimo pre-history can be found in Mathiassen, 1927, II, p. 7; 1936, p. 128; Collins, 1940, Fig. 36; Rowley, 1940, Fig. 5; Jenness, 1940, p. 11.

<sup>9</sup> For map of Dorset sites, see Rowley, 1940, Fig. 4. Add Solberg, 1907; Mathiassen, 1928; Holtved, 1938; Quimby, 1940; Jenness, 1941.      <sup>10</sup> Jenness, 1925, p. 431.

<sup>11</sup> Thus Wintemberg (1939–1940, pp. 85, 330) suggests that the Newfoundland Dorset sites may not long antedate A.D. 1500 and says that "the culture does not seem to be as well developed as in 'Dorset' sites in the Arctic." The Iglulik site may have been inhabited only in the fall and winter, in the walrus and fox hunting seasons (Rowley, 1940, pp. 491, 496).

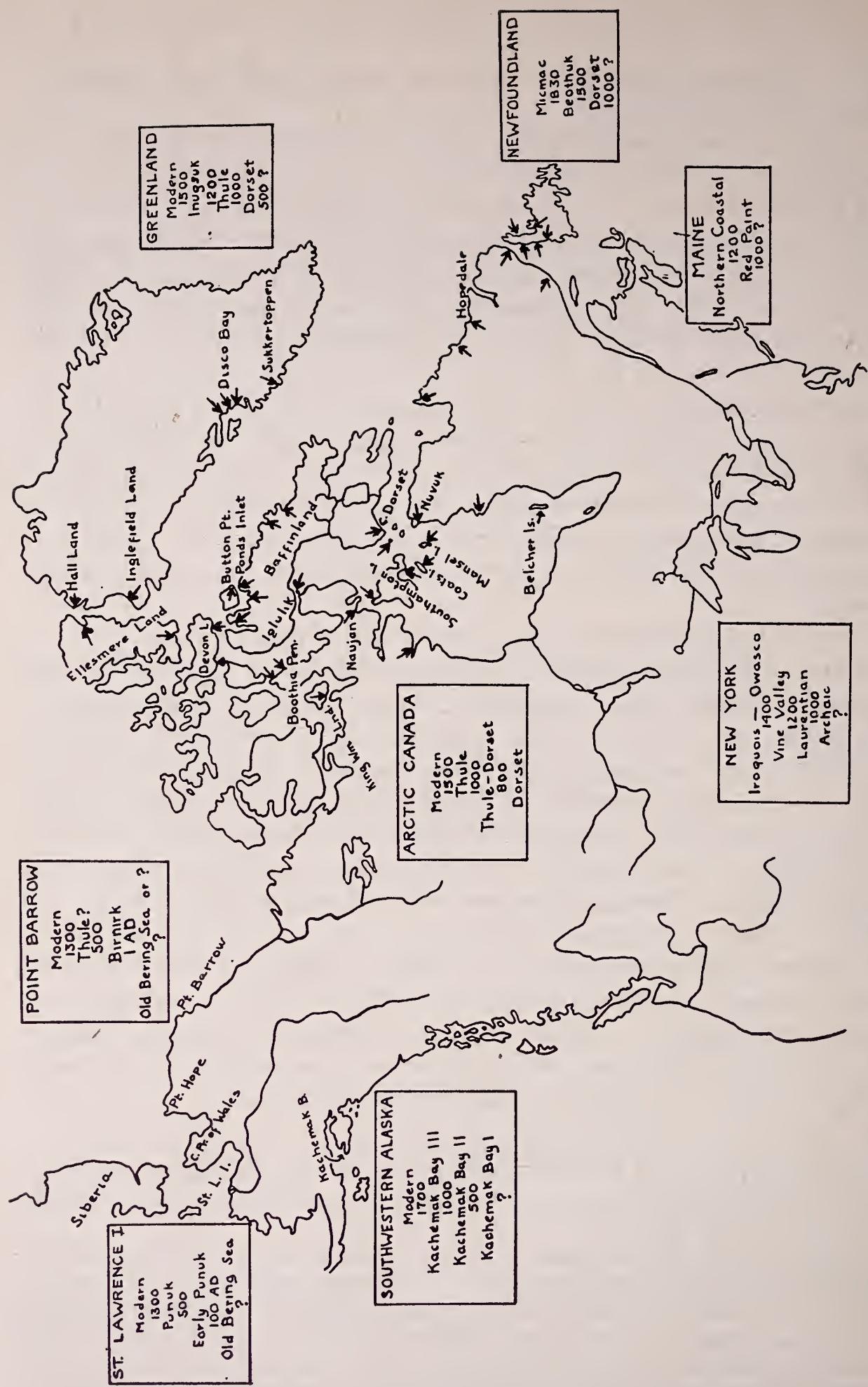


FIG. 8.—Map and diagram of suggested chronology of Northern Cultures. The arrows indicate sites with Dorset types.

The southern Dorset may have been in Newfoundland by A.D. 1000.<sup>12</sup> They abandoned this island to the Beothuk about A.D. 1500, but Eskimo groups were still to be encountered on the Gulf of St. Lawrence 200 years later.<sup>13</sup> This means that they were in contact with the Beothuk, the Micmac and Malecite, and the Laurentian Iroquois,<sup>14</sup> and at an earlier period with the predecessors of these in the Maritimes and on the St. Lawrence. Since, as we shall see, it is in the Red Paint-Laurentian group of cultures that borrowed Eskimo traits first appear, the dating of these cultures is bound up with the dating of the southern Dorset. However, I suspect that the culture which influenced the Indians was not pure Dorset but was already a Dorset enriched by Thule contacts. Therefore, if the Thule arrived in Canada about A.D. 800, which is a rather early guess, and we allow about two hundred years for their ideas to spread south, this would suggest that the Red Paint-Laurentian horizon dates from A.D. 1000 to 1200. The Archaic preceded it; the Vine Valley-Early Coastal, and the Owasco-Iroquois of New York followed it. This whole chronological scheme is, of course, hypothetical, and in this short paper must be presented dogmatically. But what is the Dorset culture? Even if we knew what types belonged to it and could distinguish its various regional and temporal manifestations, we should not have answered this question in its deepest meaning.

Various answers have been proposed: (1) that it was a rather late, "peculiar, very locally stamped phase of the Thule culture;"<sup>15</sup> (2) that it was an early coastal, or Palae-Eskimo form of that great interior Proto-Eskimo culture which has been most perfectly preserved for us by the Caribou Eskimo of the Barren Grounds west of Hudson Bay;<sup>16</sup> (3) that it was not an Eskimo culture at all, but an Indian culture, both affected by the Thule culture and influencing it;<sup>17</sup> (4) that it was a genuine Eskimo culture that had absorbed some Indian traits, but that it had "stemmed from the same parent trunk as the ancient cultures of Western Alaska," prior to 1000 B.C.<sup>18</sup>

<sup>12</sup> Birket-Smith, 1936, pp. 13, 27. Rowley (1940, Fig. 5) suggests a Dorset occupation from A.D. 1300 to 1500, with the possibility of an extension back into the previous two-hundred year period. Speck (1931, p. 565) has suggested their arrival as late as the fifteenth century.

<sup>13</sup> Speck, 1931, map 1; Birket-Smith, 1936, pp. 19, 27; Fenton, 1940, p. 169.

<sup>14</sup> The Laurentian Iroquois of Montreal eventually joined the Mohawk-Onondaga in New York. The Quebec group probably joined the Hurons, and if they had previously intermarried with the Eskimo this would explain the alleged resemblances between Huron and Eskimo crania (Fenton, 1943, pp. 167, 176).

<sup>15</sup> Mathiassen, 1927, I, pp. 206-212, 258-260; II, p. 165.

<sup>16</sup> Jenness, 1933, p. 395.

<sup>17</sup> Mathiassen, 1936, p. 130; Collins, 1937, p. 373.

<sup>18</sup> Jenness, 1940, p. 9; Collins, 1940, p. 572.

These answers are unsatisfactory because they have attempted to fit the Dorset culture into previously established categories without raising the fundamental problem as to whether those categories were sufficient to hold it. I maliciously suggest that this is something like the discussion as to whether Hopewell is or is not a manifestation of the Woodland Pattern. These guesses are also unsatisfactory because they have been largely based upon certain striking types in the Dorset and not upon the whole complex, which is like labelling a whole people on the basis of whether its women mixed broken rock or shell with their clay when making pots. What progress we have made in finding the answer has been by applying the same method to the Dorset culture that we have applied to other Eskimo cultures, and which has taught us so much in the past decade and a half. It is one we owe to our Danish colleagues, and they to Nordenskiold, and because it might be more widely applied to Indian archaeological problems, I venture to suggest it here. It is best illustrated in Collins' *Archaeology of St. Lawrence Island, Alaska*. The method is to take the culture as a whole—Old Bering Sea, Thule, or any other—and to discover of what types and variants of types it is composed. Then take each type with all its variants and study their history and distribution in other cultures, both Eskimo and non-Eskimo, wherever they can be found. In this way we may learn that the Dorset culture, for example, is made up of such and such types, each at a particular stage of its own development, and each linked by a complex series of relationships with variant forms in other cultures. The types, now reassembled in the Dorset, fall into groups: some, ancient and found only in ancient horizons; others, ancient but shared by many later Eskimo cultures, some restricted to certain horizons and certain areas, through which they have traveled in certain directions; others, finally, are local and peculiar to Dorset culture alone. Thus we see our culture as a kind of onion-like growth, built up by the accretion of many layers which we can peel off again to exhibit the history of its development. However, we cannot relate Dorset culture to other Eskimo cultures simply by adding up the number of types in each group and comparing the numerical percentages with lists of types compiled for other branches of the great Eskimo family.

What is a type? We have to start out, it is true, with some kind of list, but we soon discover that what we have to consider are not individual types, but features of types such as the profile of barbing on leister prongs, the techniques of making holes, details of the shapes of lamps, etc. Furthermore, we do not know in advance what features will be relevant. For example, Mathiassen's classification of harpoon heads, based upon features

relevant to the eastern Arctic, could not be applied to the west, and Collins had to revise it, or rather rebuild it, in order to deal with features which indicated temporal and genetic relationships on St. Lawrence Island. If he were to dig in Siberia, he would have to do this again, when certain features which he has been able to ignore might become important in a new context.

Trait lists, because they embody preconceptions about what is relevant, may be exceedingly dangerous, and a simple comparison of traits, without an evaluation of finer likenesses and differences, may obscure the most significant point. Our concepts about types must remain fluid, because types cannot be put into water-tight compartments. Furthermore, the variants of any type cannot be ranged upon a family tree, expressing one-way relationships, as we can classify related animal orders and species. Types are hybrids; they are focal points for multi-dimensional relationships. The harpoon head may take over barbs from the arrow or leister; it may give its decoration to the bodkin; two distinct types of harpoon head may produce a curious litter of mongrels. The axe and the club may fuse, as on the Northwest Coast, to form the monolithic slave-killer.

In the same way, no culture, which is a complex of such hybrid types, can be placed with other cultures on a simple family tree. The genetic relationships do not run simply from trunk to branch to twig; they cut across these two-dimensional linkages. Cultural complexes, great and small, are exchanged between peoples of diverse origins, and the same act of borrowing introduces a new relationship between lender and recipient. If we find a satisfactory answer to our question, "What is the Dorset culture?", and are able to fit it into the Eskimo picture, we shall not be adding a new branch to the Eskimo family tree, leaving the other branches in their former places. We shall be discovering new links between all Eskimo cultures, thereby rewriting Eskimo prehistory from its very beginnings. The same thing will happen if we view the culture of any modern Eskimo tribe in its true perspective.

Since we shall not have time for an exhaustive analysis of the Dorset culture, let us examine only those types which appear in it as a result of borrowing from the Indians, or which have been loaned by the Eskimo to the Indians. We shall not consider types which belong to both as their common heritage. This study should not only tell us something about Dorset-Indian relationships, but suggest some of the relationships between Dorset and other Eskimo groups, and between the various Indian groups involved.

The Dorset have six major types of toggle harpoon heads, all so dis-

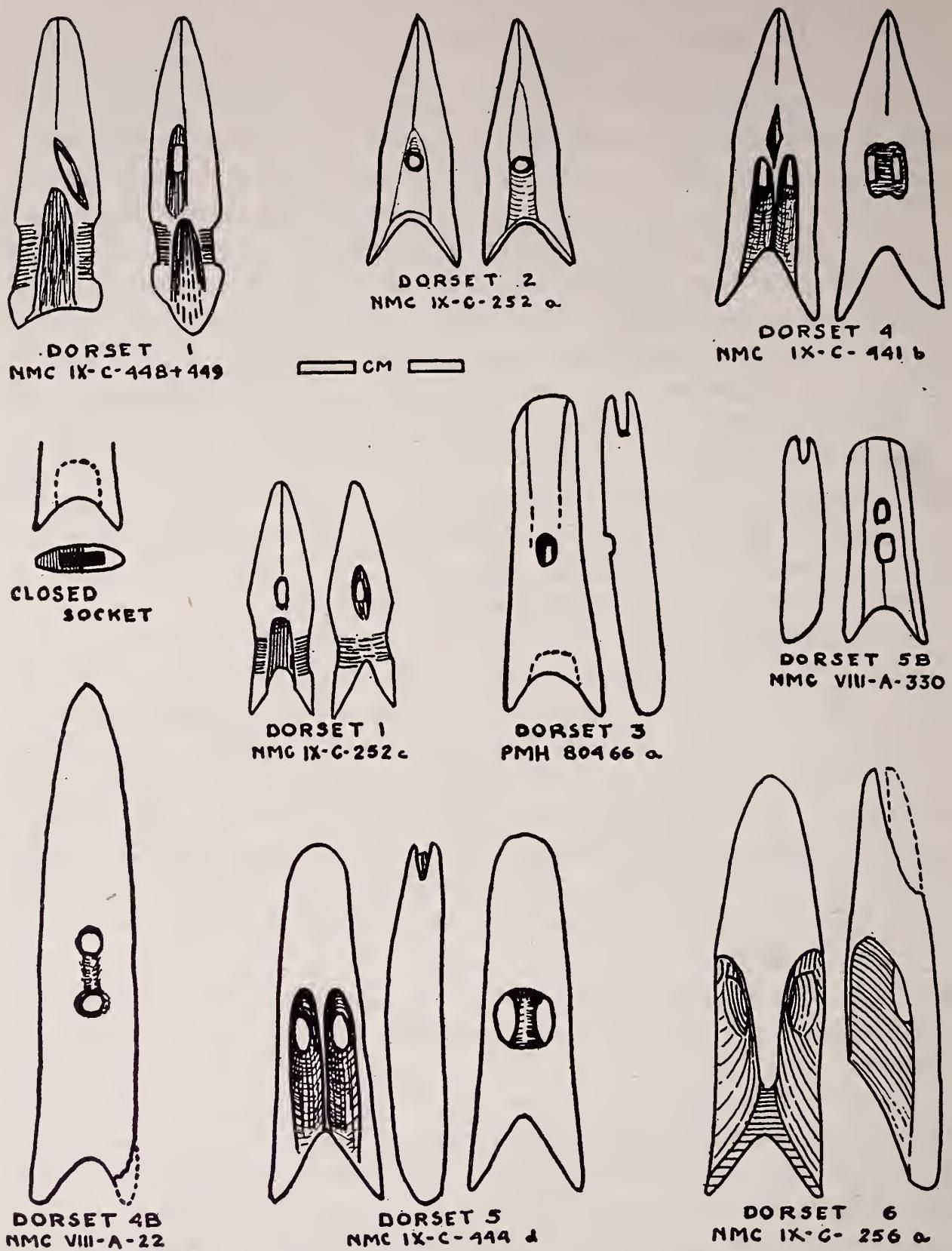


FIG. 9.—Synoptic series of Dorset toggle harpoon heads.<sup>18a</sup>

<sup>18a</sup> The following abbreviations are used in the illustrations and footnotes to indicate museums in which specimens may be found.

AMNH American Museum of Natural History, New York City.

MAI Museum of the American Indian, Heye Foundation, New York City.

tinctively styled that they could not be confused with those of any other culture (Fig. 9). There are forms with closed rectangular slit-like sockets, flanked by two lateral spurs. These are sometimes equipped with end-blades (Types 3, 5, 6), or may be without them (Types 2, 4). They may have one line hole (Types 2, 3, 6), or two line holes (Types 4, 4B, 5, 5B). There are also heads with open sockets, to be bound around with sinew cord (Type 1). Some of these have a single spur; others have two lateral spurs like the closed socket heads.

The open socket is a feature which is old in Eskimo culture. The closest parallels to the Dorset open socket head with a single medial or lateral spur are found in the Kachemak Bay I culture of southwestern Alaska.<sup>19</sup> The Thule culture has an open socket head with a lateral spur.<sup>20</sup> The Old Bering Sea, Birnirk and Punuk heads with open socket are much more complicated forms. I believe, however, that they are elaborations of a pre-Old Bering Sea type, not as yet discovered,<sup>21</sup> which has been preserved with old-fashioned simplicity in the Dorset, Kachemak Bay, and Thule cultures. To find a close parallel to the Dorset open socket head with two lateral spurs we must go to the prehistoric Ainu.<sup>22</sup> Here, as in the Dorset culture, these are the open socket equivalents of closed socket forms (Fig. 10). While the only other Eskimo culture besides the Dorset, or its descendants, to use two line holes is the Old Bering Sea culture, two line holes are often found on Ainu heads.<sup>23</sup>

On some Dorset heads there are ornamental grooves which are reminiscent of slits into which side-blades were once fitted. A few Dorset heads (Type 6) may even have had true side blades. Occasionally an open socket Dorset head may have a barb. Now Punuk and Thule open socket heads with a pair of barbs are probably derived from Birnirk heads with open sockets, fancy split spurs, and a single barb paired with a side-blade or with its residual groove.<sup>24</sup> However, the unusual Dorset specimen I figure stands still closer to the Birnirk form and argues a connection with a late phase of

|      |   |
|------|---|
| NMC  | National Museum of Canada, Ottawa.                                    |
| NMD  | National Museum of Denmark, Copenhagen                                |
| PA   | Peabody Foundation, Phillips Academy, Andover, Massachusetts.         |
| RMM  | Rochester Municipal Museum of Arts and Sciences, Rochester, New York. |
| ROMA | Royal Ontario Museum of Archaeology, Toronto.                         |
| USNM | United States National Museum, Washington, D. C.                      |

<sup>19</sup> de Laguna, 1934, Pl. 38, 11-16.      <sup>20</sup> Mathiassen, 1927, I, Pl. 1, 1.

<sup>21</sup> Unless we can admit the type figured in Collins, 1941b, Fig. 7.

<sup>22</sup> Hasebe, 1926, Figs. 5, 6; Torii, 1919-1921, Pl. XXX, 10; Yonemura, 1933, Fig. 5.

<sup>23</sup> Collins, 1937, Fig. 24, Type I, Pl. 26, 11. Baba, 1934, Fig. 13, 6; 1936, Pl. VI, 10, 25; Torii, 1919-1921, Pl. XXX, 9.

<sup>24</sup> Collins, 1940, p. 561; Mathiassen, 1927, I, p. 209.

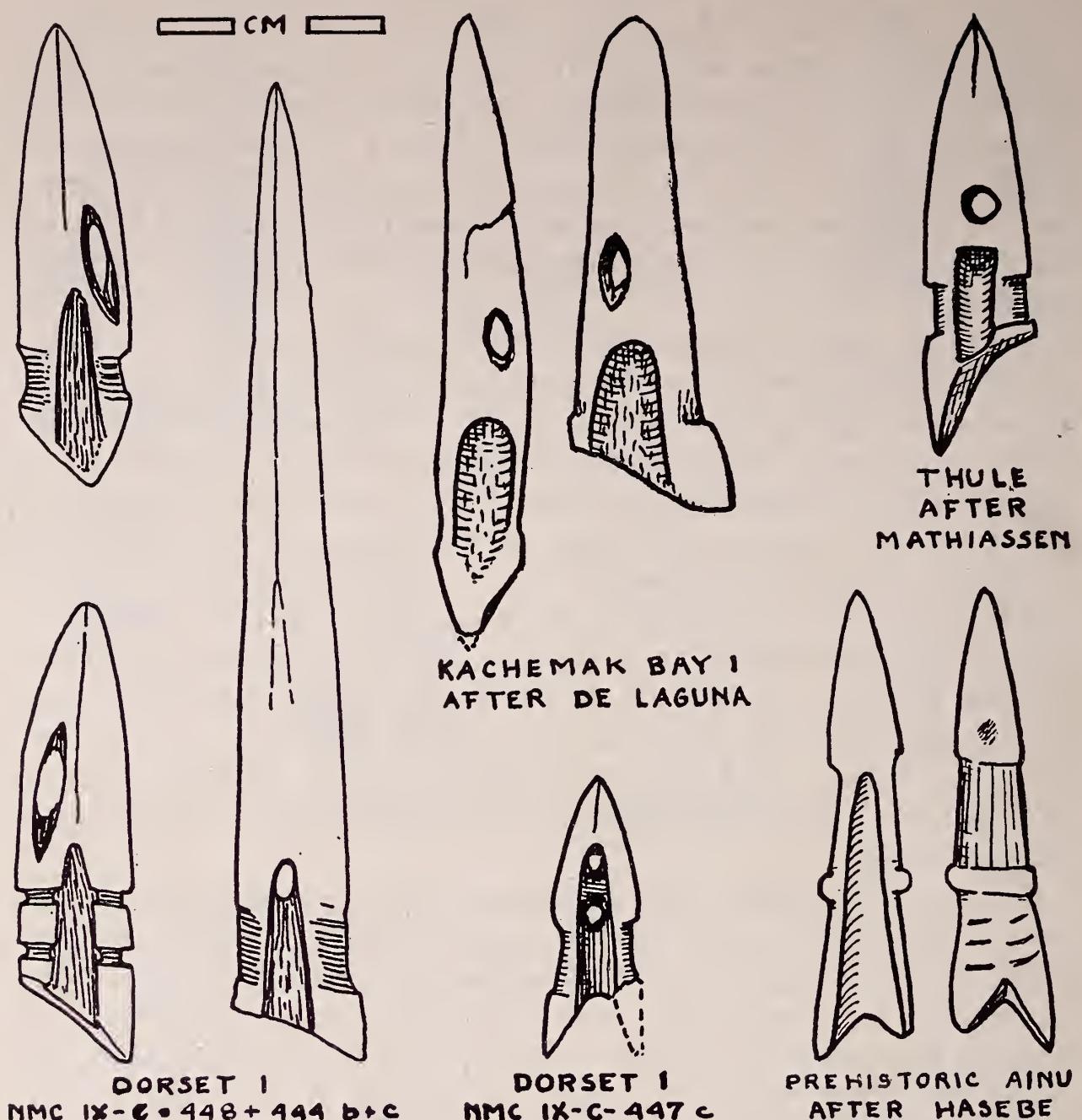


FIG. 10.—Dorset-type I harpoon heads compared with those of other cultures.

the Birnirk culture of northern Alaska, when the side-blade had been replaced by the ornamental groove (Fig. 11). Mathiassen even reports a Dorset head from northern Baffinland with bifurcated spur and true side-blade.

There are no Eskimo equivalents of the distinctive Dorset heads with closed socket and two lateral spurs. However, the prehistoric and historic Ainu had a variety of these, with and without end-blades, with one line hole or two, side by side or one above the other. Some of the Ainu heads have slits cut from one face into the socket, just as have certain Dorset specimens. I have illustrated some of the Ainu heads with slit sockets (Fig. 12).

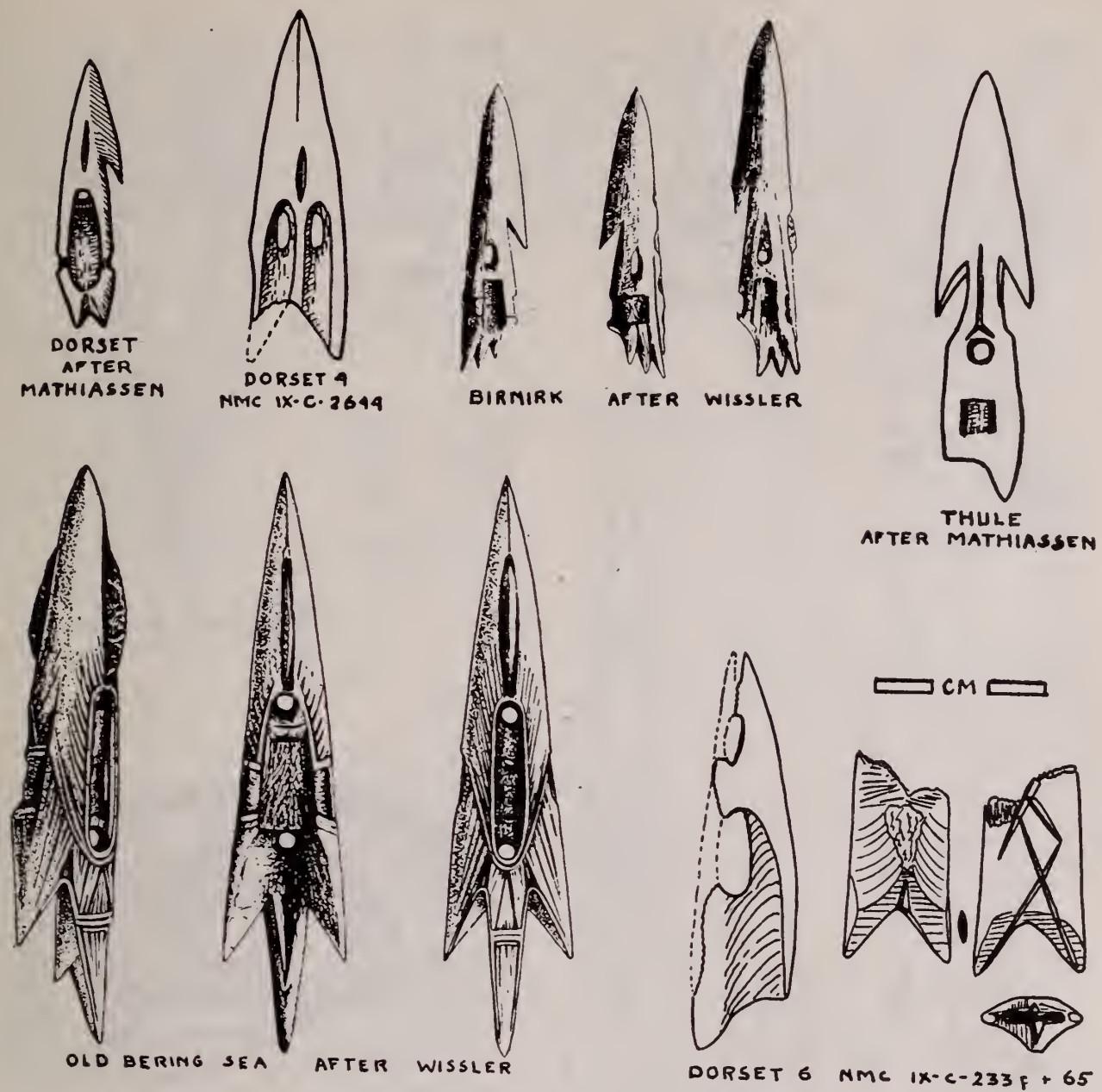


FIG. 11.—Dorset harpoon heads with traces of side blades compared with related types in other Eskimo cultures.

The only harpoon heads with *rectangular* sockets and two lateral spurs belong to the Northwest Coast and adjacent plateaus. These are carved from two pieces, lashed together.<sup>25</sup> Carve them from one piece, retaining the slit as a reminder of the two-piece origin, rotate the socket 90 degrees and you have the Dorset head. Make a round or oval (?) socket, and you have

<sup>25</sup> Mason, O. T., 1902, Figs. 20, 22. This type may have either an oval or a rectangular socket. The use of two heads of this type, on a spear with a double foreshaft, as practiced by the northwestern Indians, by the Ainu (cf. Hitchcock, 1891, Fig. 85; MacRitchie, 1892, Pl. IX), and by the East Greenland Eskimo (Mathiassen, 1933, Fig. 40), suggests that the Dorset heads may also have been used in this way. See also Hewes, 1942.

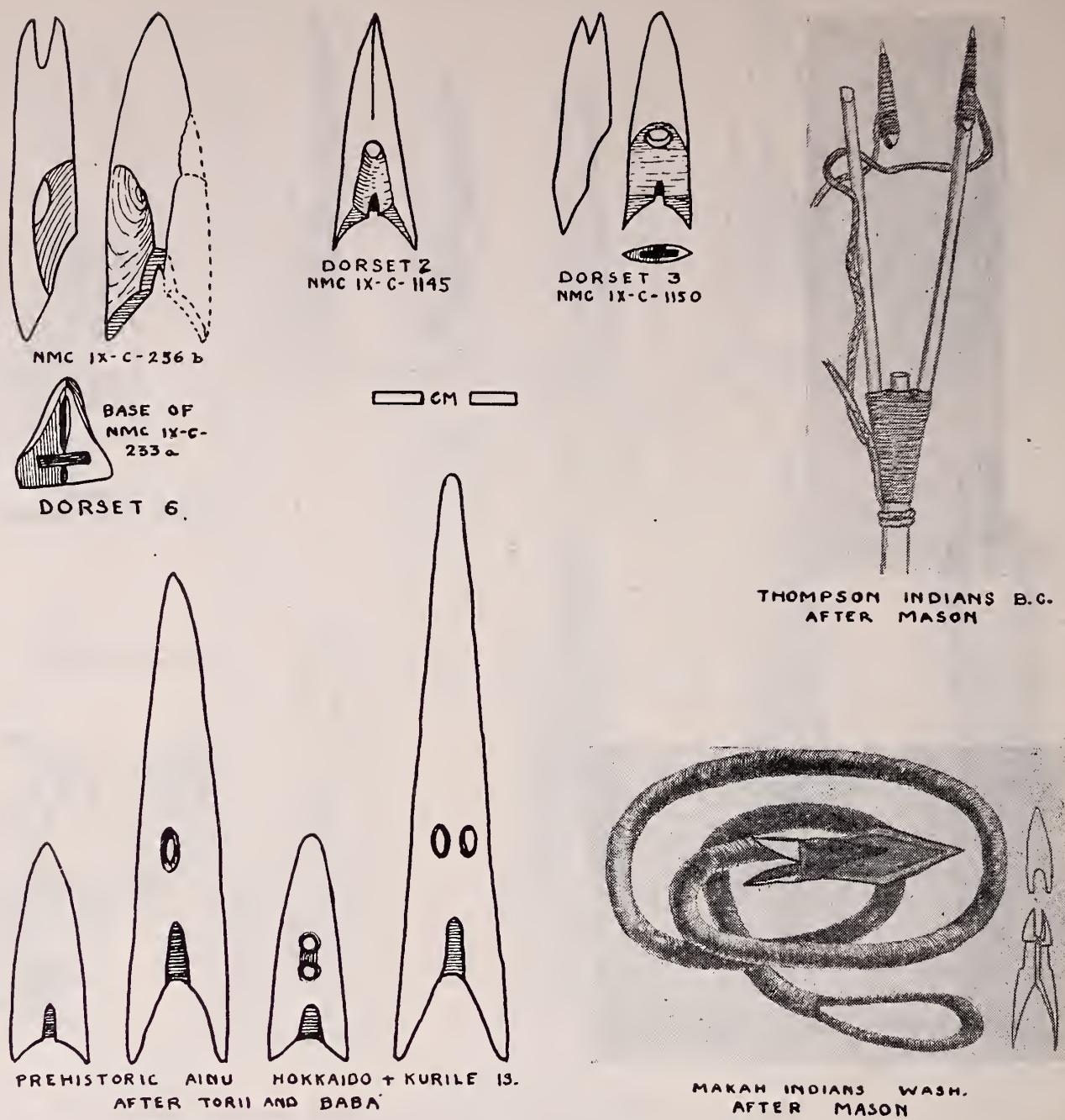


FIG. 12.—Dorset harpoon heads with slit sockets compared with related types from other cultures.

the Ainu pattern. Do not all these features suggest that we might look for the prototypes of the Dorset heads in an ancient horizon in the North Pacific area? At any rate, the Dorset specimens are not as unusual as we had first supposed. Other types of specimens, if analyzed in the same way, would tell a similar story.

What happened to the Dorset heads? Collins has suggested that they combined with Thule forms to produce the hybrid types so conspicuous in

modern and protohistoric Central and Greenland Eskimo cultures.<sup>26</sup> They have also played a role on Indian soil. The Beothuk, witness Shanawdithit's sketch, certainly copied the Dorset Type 3 head, using a barbed iron end blade.<sup>27</sup> The prehistoric Indians of Nova Scotia took over the same type, but gave it a round, not a rectangular socket.<sup>28</sup> As we go farther south,

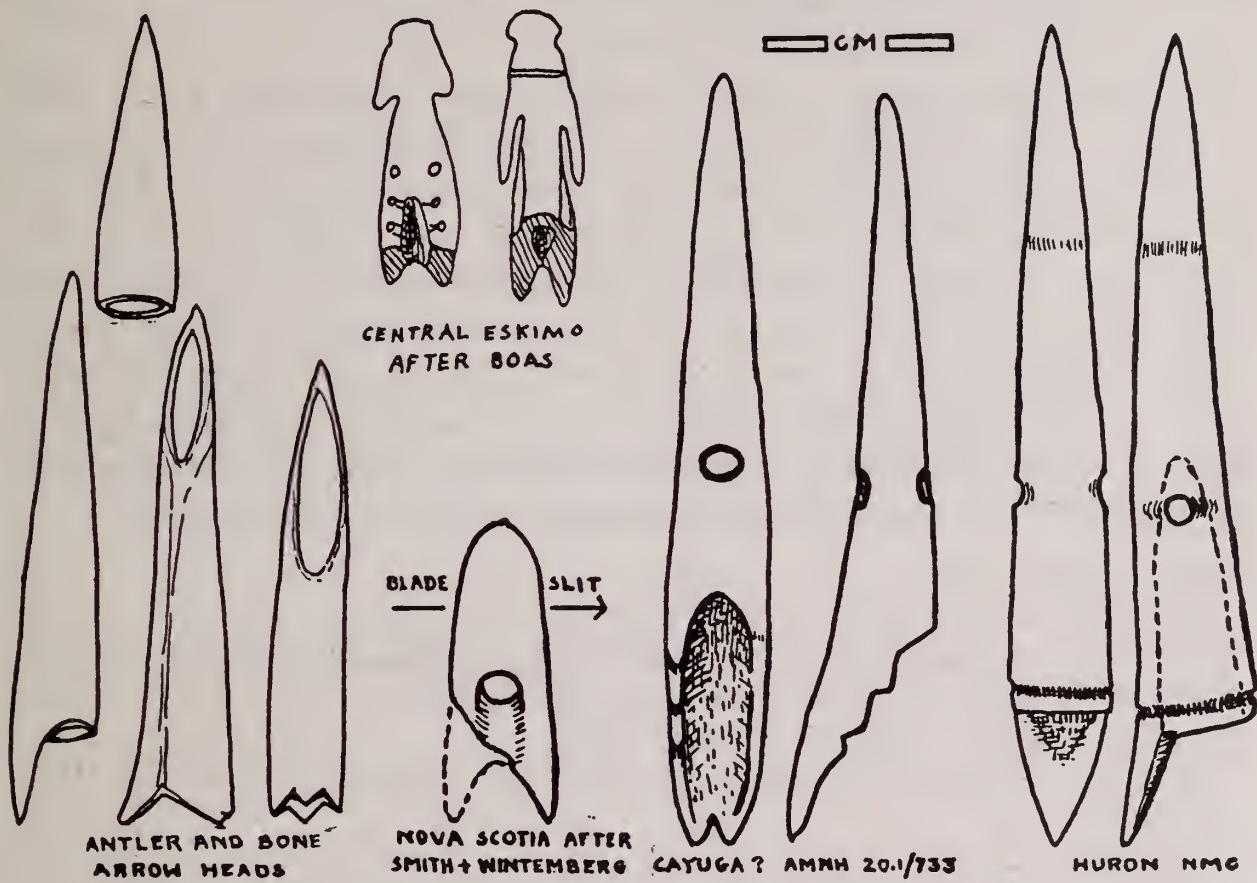


FIG. 13—Modern and protohistoric Central Eskimo, Nova Scotian, and Iroquoian harpoon heads.

however, the peculiar Eskimo form was left behind, but the idea of the toggle harpoon head may have been adopted by the Indians and grafted onto the conical arrow point of bone or antler. This type of arrowhead is listed by Ford and Willey among the common types of the eastern Archaic horizon,<sup>29</sup> and you will find the simple form with plain, straight base, and without a perforation in the side, in practically every northeastern culture from the Archaic to the Iroquois. Variants with the base cut to produce one, two, or more spurs (or basal barbs) seem to be relatively late, and are found,

<sup>26</sup> Collins, 1937, p. 315.

<sup>27</sup> Howley, 1915, Sketch VIII; Jenness, 1929, p. 37.

<sup>28</sup> Smith and Wintenberg, 1929, Pl. XX, 1, 2, p. 34.

<sup>29</sup> Ford and Willey, 1941, p. 333; cf. Willoughby, 1901.

for example in Iroquois, Fort Ancient, and Late Coastal sites (Fig. 13).<sup>30</sup>

Specimens with a spur and a hole in the side are definitely harpoon heads, and these were made only by the Iroquois.<sup>31</sup> Those with the hole at right angles to the plane of the spur are like specimens, probably post-Thule in age, used by the Canadian and Greenland Eskimo for catching fish (Fig. 13).<sup>32</sup> The other Iroquois type with the line hole in the plane of the spur is not known from any eastern Eskimo culture.

Conical antler arrow points with a plain, unspurred base and a hole in the side were made by some Fort Ancient groups, as well as by the Iroquois,<sup>33</sup> and Mills suggests that these may have been used for harpoons.<sup>34</sup> Although it is difficult to see how the plain base could have caught in the wound, Mathiassen mentions a degenerate Eskimo specimen of this type from a Thule site in Baffinland, where it was presumably used for salmon trout.<sup>35</sup>

These Indian harpoon heads are all late. They are not copies of Dorset types, for they lack specific Dorset features, but they may have been inspired by harpoon heads used by the post-Dorset Eskimo who frequented the Gulf of St. Lawrence in late prehistoric and early historic times.

<sup>30</sup> *With one spur:*

Iroquois (Parker, 1922, Pl. 40, 4; NMC Files).

Fort Ancient (Willoughby, 1901; Fig. 54, f; Hooton and Willoughby, 1920, Pl. 7, f, i, j).

Middle Mississippi of Wisconsin (Barrett, 1933, Pl. 59, 16).

Hopewell of New York (Ritchie, 1940a, Pl. 2, 37).

Late New York Coastal (Willoughby, 1901, Fig. 54, e; Skinner, 1932, Fig. 9 on p. 18; AMNH exhibits).

*With two spurs:*

Iroquois (Wintemberg, 1928 b, Pl. XXI, 18; 1931, Pl. XVI, 3; 1936, Pl. 1, 15, 18; Skinner, 1921, Pl. XXIII, c, h; Parker, 1922, Pl. 40, 6; RMM files).

Fort Ancient (Mills, 1906, Fig. 33, 2; 1917a; Willoughby, 1901, Fig. 54, b, c).

Northern Coastal—Maine (Willoughby, 1935, Fig. 122, a, c, e; USNM 219667; PMH 92818.—Mass. (Willoughby, 1935, Fig. 122 b).

Late New York Coastal (Skinner, 1932, Fig. 3 on p. 18; MAI 15/86).

*With more than two spurs:*

Iroquois (ROMA HD. 1051; Wintemberg, 1936, Pl. 1, 14).

Fort Ancient (Mills, 1904, Fig. 34).

Monongahela Woodland (Butler, 1939, Pl. 14, a).

Late New York Coastal (Fergusson, 1935, p. 17).

<sup>31</sup> Huron (Wintemberg: 1906, Figs. 46, 50; and NMC spec. from Simcoe Co., Ont.).

Mohawk-Onondaga (ROMA HD. 29662; Wintemberg, 1906, Figs. 48, 51).

Seneca (Harrington in Parker, 1922, pp. 229f.; and possibly USNM 31520).

Cayuga (?) (AMNH 20.1/732 and 733).

<sup>32</sup> Mathiassen, 1927, II, p. 20.

<sup>33</sup> Iroquois (Parker, 1922, Pl. 40, 5, hole not completed. Beauchamp 1902, Fig. 108, is from Brewerton, New York, and is probably Iroquois).

Fort Ancient (Mills, 1906, Fig. 35, 1, 2; 1917a, Fig. 78; 1904, Fig. 34).

<sup>34</sup> Mills, 1906, p. 52.

<sup>35</sup> Mathiassen, 1927, II, p. 20.

The Dorset Eskimo made a variety of delicately barbed points (Fig. 14). Most of these were obviously intended to be fastened securely to a wooden shaft, for the butt of the point flattens out into a scarfed tang, roughened with fine cross cuts to keep it from slipping. There is also a hole, usually near one edge, to hold a lashing cord. These points range in length from 9 to 15 cm, may have from one to fifteen small barbs, usually arranged asymmetrically on both edges; one surface is more steeply faceted than the other, producing a sub-triangular cross section. The style of barbs is similar to that on Old Bering Sea bird-darts, which have side-prongs fastened about halfway down the shaft. However, the butt ends of the Dorset specimens lack the particular character appropriate to bird-dart side-prongs, and I think they were used as end-prongs, for multi-pronged darts or leisters. The latter weapon, used for birds, fish, and small aquatic mammals, is very ancient and widely distributed, both within and outside of Eskimo culture.<sup>36</sup> The bird-dart, on the other hand, seems to be a specifically Eskimo invention, known from the Old Bering Sea, Birnirk, and Punuk cultures, and introduced into the east by the Thule people. These eastern forms are often hybrid types, combining the multiple end-prongs of the leister with the bird-dart side-prongs set part way down the shaft.<sup>37</sup>

Many of the barbed points from Indian sites, vaguely and inaccurately designated as "harpoons," are probably prongs for leisters. It is not easy, however, to distinguish between fixed barbed points used singly, for arrows or darts, and those used in groups, for leisters. The fixed points from Indian sites include all or at least most of those barbed on both edges and a considerable proportion

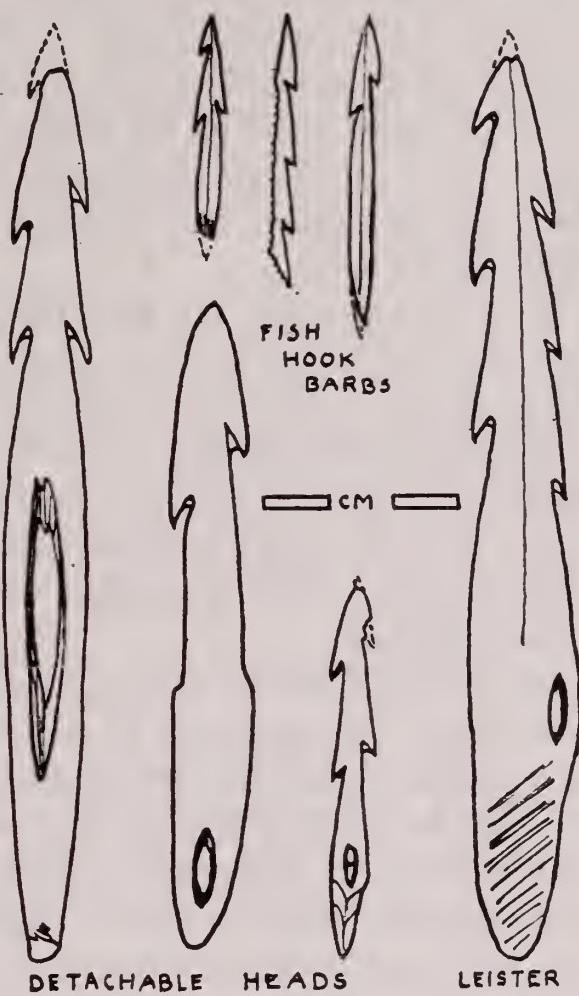


FIG. 14.—Synoptic series of Dorset barbed points.

<sup>36</sup> Birket-Smith, 1929, II, p. 209.

<sup>37</sup> Birket-Smith, 1929, II, p. 65 and Table A 27; Collins, 1937, pp. 323, 357, 382.

of those barbed on one edge. Such fixed barbed points are known from the shell heaps of Nova Scotia and Maine, including the Red Paint site at Taft's Point, although they are more common in the upper than in the lower (Red Paint) layers. They have been found on Iroquois sites, where Wintemberg ascribes them to Algonkian influence,<sup>38</sup> and they belong to the Owasco, Point Peninsula, and probably to the Laurentian cultures. They are now known from Early New York Coastal sites, and indeed barbed points of any kind are rare from the Late New York Coastal horizon. They are also found in the Intrusive Mound Culture of Ohio.<sup>39</sup> Birket-Smith mentions a type of leister used in Virginia as being particularly like those made by the Eskimo,<sup>40</sup> but of the archaeological specimens, those from the northern coastal shell heaps have the strongest Eskimo flavor. They suggest, however, a generalized Eskimo rather than a specifically Dorset style.

Curiously enough, the Red Paint people made leister prongs of slate, notched (not barbed) on one or both edges.<sup>41</sup> Slate leister prongs, undoubtedly related to these, are known from the Manitunik Eskimo who lived in southeastern Hudson Bay in the sixteenth century, and whose culture was built on a Thule-Dorset foundation.<sup>42</sup> Since, on the whole, fixed barbed points of bone are most highly developed in the northern part of the Indian territory under discussion, we may tentatively ascribe these to Eskimo influence.

Some of the Dorset points, barbed on both edges, seem to have been detachable. They generally have a medial hole for the line, or have a flaring butt around which the line could be tied. Such detachable barbed heads are used by modern Eskimo with a dart thrown from the spear thrower, with a fish spear thrust with the hand, or even with a harpoon arrow shot from the bow. While heads of this type are lacking from the Old Bering Sea, Birnirk and Punuk cultures, they have been found in the most ancient horizon in southwestern Alaska. I think that the few specimens from Thule sites are due to Dorset influence. The center of their modern distribution is

<sup>38</sup> Wintemberg, 1906, pp. 38; 48; 1935, pp. 232-235.

<sup>39</sup> Nova Scotia (Smith and Wintemberg, 1929, Pl. VI, 6, 7, 9, Pl. VII, 1, 2?).

Maine (Willoughby, 1935, Fig. 120, g, h, i, j; Hadlock, 1939, Pl. 7, b, p. 15).

Owasco (Ritchie, 1936, Pl. IX, 21-24; RMM AR 7.1.07/70040).

Point Peninsula (Nichols, J. B., 1928, Pl. 1, 3, 4, 17).

Frontenac Island (Ritchie 1939a, Pl. 1, 34, found alone in a grave).

Intrusive Mound Culture (Mills, 1922a, Fig. 87, 3, 4).

<sup>40</sup> Birket-Smith, 1929, II, p. 152.

<sup>41</sup> Willoughby, 1935, Fig. 36.

<sup>42</sup> Quimby, 1940, p. 153.

among the southern Alaskan Eskimo; they are common among the Northwest Coast Indians and among the ancient and modern Ainu.<sup>43</sup> Like the toggle harpoon heads, these barbed heads suggest a link between the Dorset and an ancient North Pacific horizon.

In the Northeast, detachable barbed heads first appear in the Laurentian and in the Red Paint shell heaps at Blue Hill (Nevin's) and Taft's Point. Had not all bone material rotted in classic Red Paint sites, we should have found many barbed heads, I hazard, for they would have been indispensable to a people whose gouges tell us that they made dug-outs and whose whale and porpoise effigies betray an interest in sea-mammals. They are certainly common in later shell heaps of Maine and the Maritimes, but appear only rarely in late New York Coastal sites, perhaps because the game for which they were intended did not occur so far south on the coast, or perhaps because the New York tribes did not try to hunt it. The detachable head barbed on one edge was passed on by the Laurentians to the Point Peninsula Indians, and by the latter to their relatives who left the Intrusive Mound Culture in Ohio. The detachable barbed heads with poorly finished butts, found at the protohistoric Fort Ancient site at Madisonville, probably represent the degenerate survivals of this tradition. The Iroquois took over the detachable barbed head from the Algonkians, and in the historic forms—large, clumsy, armed with a single powerful barb—we see how complete has been the transformation from the delicately multi-barbed Dorset prototype.<sup>44</sup>

A few very small barbed points in the Dorset collections seem to have been parts of composite V-shaped fishhooks, the shanks of which were presumably made of wood, since they have not survived to us. While the composite V-shaped fishhook with the barb made of a plain sliver of bone,

<sup>43</sup> Birket-Smith, 1929, II, pp. 68 f., 250 f., Tables A 30 and B 22; de Laguna, 1934, pp. 189 f.; Birket-Smith and de Laguna, 1938, p. 434.

<sup>44</sup> Brewerton (Ritchie, 1940b, Pl. XXIX, 8, 24; barbed on one edge).

Frontenac Island (Ritchie, 1939a, Pl. 1, 32, 33: barbed on one edge).

Nevin Shell Heap (PA: barbed on one edge; barbed asymmetrically on both).

Taft's Point Shell Heap (Hadlock, 1939, Pl. 7, b, p. 15 and other pictures kindly furnished by Mr. Hadlock).

Maine shell heaps (Willoughby, 1935, Fig. 120, n, o, p, q, r).

Nova Scotia (Smith and Wintemberg, 1929, Pl. VI, 10, 11, 12).

Late New York Coastal (RMM files).

Point Peninsula (Nichols, 1928, Pl. 2, 2, 6, 7).

Intrusive Mound Culture (Ritchie, 1937, Fig. 6, 7).

Madisonville (Hooton and Willoughby, 1920, Pl. 11, j, h, l, n).

Iroquois (Wintemberg, 1906, Figs. 2-20, 22, 23, 26-30; 1935, pp. 232 ff.).

itself unbarbed, is an ancient and widely distributed type, the composite V-shaped hook with a barbed barb is more limited in its range. It belongs to all periods in Kachemak Bay, but farther north does not appear until the Punuk horizon, and is unknown to the Thule culture.<sup>45</sup> The peculiar fishhooks of the Manitunik Eskimo of southeastern Hudson Bay probably owe their barbed points to the Dorset, and their slate shanks to their own ingenuity.<sup>46</sup> A number of the little bone points from Maine shell heaps, barbed on one or both edges are probably barbs of V-shaped hooks. Such small points are also known from Taft's Point and from the Point Peninsula culture.<sup>47</sup> Doubtless other examples could be recognized if it were not for the lazy habit of lumping together all barbed points, of all shapes and functions, under the blanket term "harpoon." I suspect that this type of fishhook was derived from the Dorset culture.

There is one more bone type which may have come to the northeastern Indians from the Eskimo. This is the comb carved in one piece. It is not at all certain that the Dorset had combs, for the only known Dorset specimen of this sort is a bear canine, carved with two prongs like a hair pin. It might be argued that the Dorset knew only the composite comb, made of separate tines fastened together. The distribution of this type suggests that it was older in North America than the one-piece comb. It was used by the Aleut (and Pacific Eskimo?) and by the East Greenlanders.<sup>48</sup> The one-piece comb, on the other hand, belongs to the Old Bering Sea and Thule cultures and to their descendants,<sup>49</sup> and in Eurasia boasts a respectable antiquity.

The one-piece comb has a curious distribution in the Northeast. It was common among the Beothuk of Newfoundland, who gave it the curving silhouette which is especially characteristic of the modern Central Eskimo specimens and which is traceable to the Thule culture.<sup>50</sup> Bone combs with incised decorations reminiscent of Dorset, Thule and Beothuk styles are known from the shell heaps of Maine and from the Point Peninsula sites

<sup>45</sup> de Laguna, 1934, p. 196; Collins, 1937, Pl. 75, 6, 7.

<sup>46</sup> Quimby, 1940, p. 153 f., Fig. 17, f; Jenness, 1941, Pl. XV, 3, 4, 7). Compare with bone fishhook shanks from Nova Scotia (Smith and Wintemberg, 1929, Pl. VII, 5-8).

<sup>47</sup> Willoughby, 1935, Fig. 120, *a-b*, *h-m*; Hadlock, 1939, Pl. 7, *b*; Nichols, 1928, Pl. 1, 16.

<sup>48</sup> Birket-Smith, 1937b, pp. 33 ff.

<sup>49</sup> Mathiassen, 1927, II, pp. 113 f.; Birket-Smith, 1929, II, p. 95 and Table A 65; Collins, 1937, Pl. 58, 10.

<sup>50</sup> Howley, 1915, Pl. XXVII, 35-39. Compare with Birket-Smith, 1929, II, p. 95 and Mathiassen, 1927, I, Pl. 52, 13.

of New York.<sup>51</sup> Combs and hair pins have been found on Cape Cod.<sup>52</sup> A different style of comb, which is not Eskimo in shape or decoration, has projections at the ends of the handle, often carved into animal shape. These belong to the Laurentian-Archaic culture of Frontenac Island, to the Adena and Intrusive Mound cultures of Ohio, and especially to the prehistoric and historic Iroquois.<sup>53</sup> Bone combs with suspension holes, but without animal heads, come from the late Fort Ancient site at Madisonville.<sup>54</sup> Birket-Smith also reports the one-piece comb from the Cherokee and Rappahannock.<sup>55</sup> This distribution is difficult to explain, and we shall meet something very similar when we consider the semi-lunar knife. I hesitate to say that the presence of the one-piece comb in the Northeast is due to Eskimo influence, yet the styles of Beothuk, Northern Coastal and Point Peninsula combs exhibit features which link them in various ways with the combs of the Thule and modern Central Eskimo and with Dorset art. Is it possible that the late Dorset of southern Labrador or Newfoundland adopted the one-piece comb from the Thule Eskimo, and that its influence then spread over the Northeast? The comb is unknown in pure Archaic sites, and does not appear until the Laurentian (or Laurentian-Archaic), a horizon which carries strong Eskimo connections. However, before we can settle this problem we must know from what source were derived the knobs and animals on combs.

The ulo or semi-lunar knife of ground slate has long been regarded as one of the types which prehistoric Indians in the Northeast adopted from the Eskimo (Fig. 15). Yet, curiously, we have no positive evidence that slate ulo blades were made by the Dorset Eskimo. To be sure, they have been found on northern sites along with typical Dorset specimens<sup>56</sup> but since these blades are of the universal Eskimo pattern, and the sites at

<sup>51</sup> Willoughby, 1935, Fig. 123, *h, i* (reminiscent of Dorset art).

Smith, W. B., 1929, Fig. 15 (reminiscent of Thule art).

Hadlock, 1941, Fig. 3, *11* (with typically Thule design).

Point Peninsula comb with Beothuk design in RMM files.

<sup>52</sup> Willoughby, 1935, fig. on p. 227.

<sup>53</sup> Frontenac Island (Ritchie, 1939a, Pl. 1, *19*).

Intrusive Mound culture (Ritchie, 1937, Fig. 7, *11*).

Adena (Mills, 1902, Fig. 22).

Iroquois (Parker, 1922, Pl. 34, *2*, Fig. 27; Skinner, 1921, Pl. IX, *a*, etc.).

<sup>54</sup> Hooton and Willoughby, 1920, Pl. 17, *k, n, o*.

<sup>55</sup> Birket-Smith, 1929, II, p. 348 and Table B 44.

<sup>56</sup> Cape Dorset (NMC ix-c-957, 958; MAI 15/8137), Northern Baffinland (NMC ix-c-509, 510), Devon Island (NMC ix-c-2667).

which they were found have yielded non-Dorset material, there is no method of assigning the blades to any particular horizon. Ulo blades are known from Newfoundland,<sup>57</sup> and from the Eskimo site at Bradore, Quebec, on the north shore of the Gulf of St. Lawrence,<sup>58</sup> but these specimens may be Indian, not Eskimo. Furthermore Rowley did not find a single ulo at his Dorset site near Igulik.<sup>59</sup> The only other Eskimo culture which seems

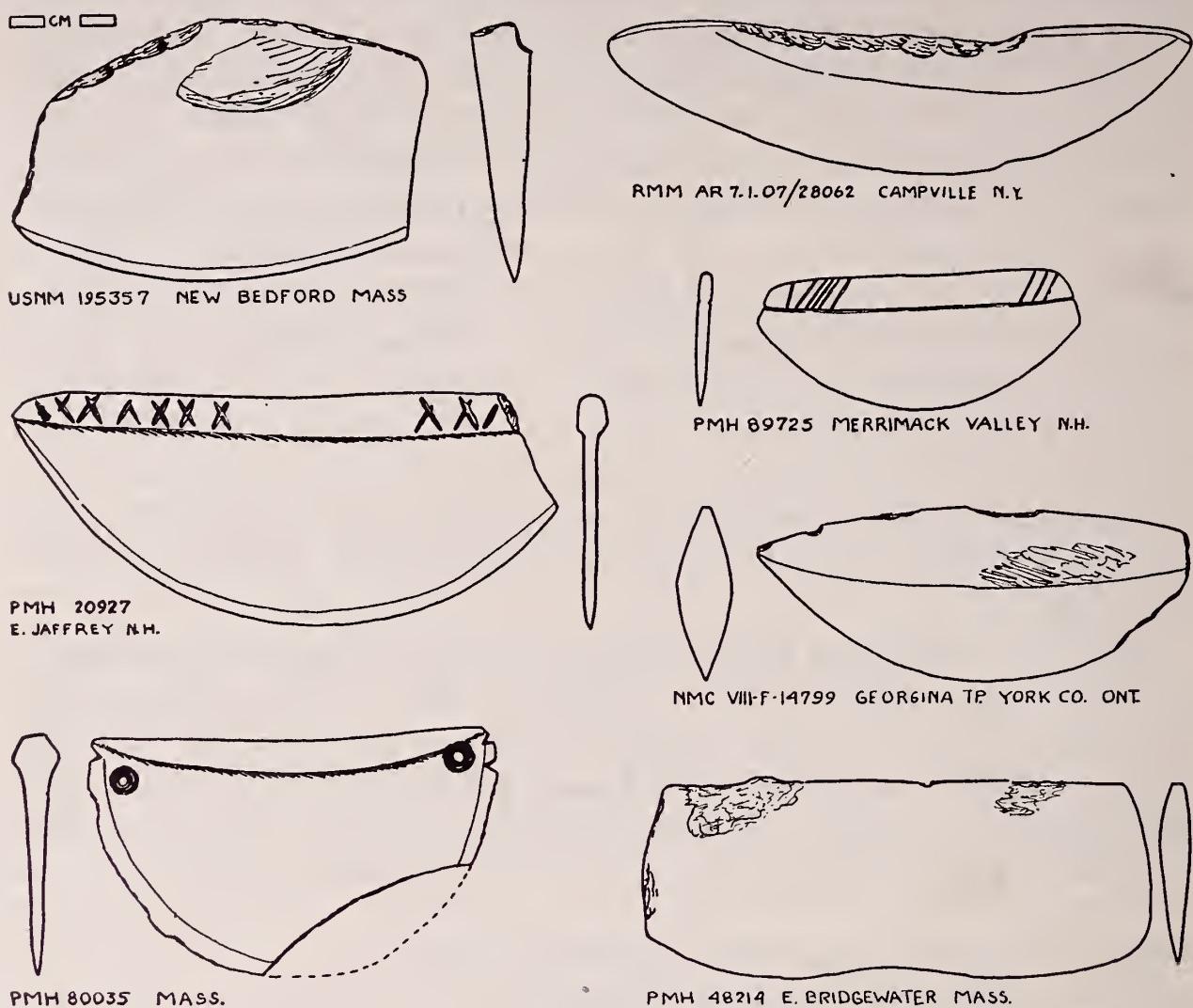


FIG. 15.—Series of semi-lunar knives from Indian sites.

to have lacked the ulo is the Ipiutak of Point Hope, Alaska, a peculiar culture, which as yet we cannot place, although it has some Old Bering Sea affinities. Here, chipped flint may have replaced ground slate for ulos.<sup>60</sup> It is possible, therefore, that the Dorset culture originally lacked the slate

<sup>57</sup> Howley, 1915, Pl. XXII, 32.

<sup>58</sup> NMC VIII-F-470.      <sup>59</sup> Rowley, 1940, p. 493.

<sup>60</sup> Rainey, 1941, p. 370, Pl. VI, 13; compare with specimens from Southampton Island, Hudson Bay (Mathiassen, 1927, I, Pl. 70, 2, 3, 6).

woman's knife, and that it was taken over by late Dorset groups from the Thule invaders. Of one thing we can be sure; the Indians did not invent the semi-lunar knife independently of the Eskimo ulo, and the only people from whom they could have received it were the southern Dorset Eskimo, probably after the latter were subject to Thule influence.

On the basis of published material, specimens in eastern museums or recorded in their files, and personal communications,<sup>61</sup> I have endeavored to compile a list, admittedly incomplete, of the semi-lunar knives found in the Northeast. The distribution is: New Brunswick 3, Nova Scotia 1, Ontario over 30, Maine 10 including fragments, Vermont 9 including fragments, New Hampshire 7, Massachusetts over 26, Connecticut 14, Rhode Island 4, New York over 33, New Jersey over 16, Pennsylvania 8, Delaware 3, Ohio 1. These specimens fall into two main types. The first has a thin back, like the Eskimo blades, suitable for insertion into bone or wooden handles. These are found in all states and provinces from which I was able to get specific information, but are relatively common in New Brunswick, Ontario, Maine, Rhode Island, and Vermont—i.e. in the north. The second class of ulos has an abruptly thickened grip, suggesting a handle like that on Eskimo blades. Such specimens predominate in New Hampshire, Massachusetts, Connecticut, and New York—i.e. farther south and west, although they range from Ontario to Delaware. Specimens of intermediate type may be faceted (Ontario and Maine), or they may have a thin back outlined by grooves to suggest the thick grip (New Hampshire, Connecticut, and New York). Decorations consisting of short vertical lines, a row of X's, or zig-zags may be incised on the thick grip. These decorations are definitely non-Eskimo, for I have never seen an Eskimo ulo with any kind of ornamentation except on the carved handle. The thick grip is also non-Eskimo. Only one specimen of this type has been recorded from an Eskimo site. This unique blade comes from the east coast of Hudson Bay.<sup>62</sup> Blades from Massachusetts, Connecticut, Rhode Island, and New York may have from one to three holes, almost always cut like Dorset holes, not drilled. These are usually placed in the middle or near one or both ends of the ulo, either just

<sup>61</sup> Published material in the Annual Archaeological Reports of Ontario, and by Willoughby, Beauchamp, Parker, Ritchie, Bailey, Philhower, and Cross; specimens in NMC ROMA, AMNH, MAI, RMM, PMH, PA, USNM; personal communications from Harlan Smith, W. J. Wintemberg, W. A. Ritchie, Roland B. Hill, Dorothy Cross. The best synoptic series of illustrations are in Willoughby, 1935, Figs. 43 and 44.

<sup>62</sup> In Peter Redpath Museum, McGill University, Montreal. Described in the NMC files by Wintemberg; mentioned by Willoughby, 1935, p. 72. No further data on provenience. One Old Bering Sea specimen was made with thick blunt back—not abruptly thickened as on Indian blades—for use without a handle (Collins, 1937, Pl. 39, 33).

below the thick grip or in the corresponding area if the back is plain. Although the cut holes are definitely in the Dorset style, I do not know of any Eskimo ulo blades from the east finished in this way. One New York specimen has a pair of notches near the back, like so many Eskimo specimens that were furnished with a winding of baleen instead of a separate handle. Taken as a whole, the Indian ulos differ from any great collection of Eskimo specimens in being better made; that is, they adhere more closely to the ideal semi-circular shape, while Eskimo collections furnish a smaller percentage of perfect "museum specimens."

Unfortunately, most of the Indian semi-lunar knives have survived to us without information as to their original cultural contexts. Two from Hastings County, Ontario, are said to have been found with slate "arrows."<sup>63</sup> An ulo with plain back, and four broken specimens, a large chipped leaf-shaped knife blade, a fragment of an adze or scraper, and other large chipped blades, all liberally bedaubed with red paint, come from a Red Paint site near Dennisville, Maine. The chipped material shows the shallow, even pressure flaking characteristic of classic Red Paint technique.<sup>64</sup> All the Vermont specimens, including one with thick grip, the rest apparently with plain backs, come from Bailey's Laurentian site at Vergennes.<sup>65</sup> A specimen with plain back and cut hole comes from a non-ceramic site in Rhode Island where it was associated with a pestle and common types of arrow points.<sup>66</sup> Ulos are characteristic types at Vosberg Laurentian sites in the Hudson and Mohawk valleys in New York. An ulo with cut hole comes from a mature Coastal site on Long Island.<sup>67</sup> One with thin back and another with thick grip were found at the Abbott Farm near Trenton,<sup>68</sup> and one with thin back comes from Red Valley in central New Jersey, associated with a culture which is similar to the Early Coastal of New York, though it may not be contemporaneous with it.<sup>69</sup> The ulo, we may conclude, seems to be definitely associated with the Laurentian Aspect in the north, although it may be later in the south. It was not unknown to the Red Paint people, and if the classic sites, with the one exception cited, were not exclusively devoted to men's weapons and tools, I suspect that they would have revealed more evidence of it.

It is unfortunate that some of the double-edged slate blades found on

<sup>63</sup> NMC files: Lots 15 and 16, Concession 8, Sidney Township, The "slate arrows" are probably short broad slate blades with notched tangs.

<sup>64</sup> USNM 7032, found with 7007 to 7031.

<sup>65</sup> Bailey, 1939, pp. 9 f., Pl. VI, 1-5, 8, 9, 15.      <sup>66</sup> RMM files.      <sup>67</sup> RMM files.

<sup>68</sup> Personal communication from Dorothy Cross, May 4, 1937.

<sup>69</sup> Cross, 1941, pp. 210 ff., Pl. 59 b, 3.

Indian sites should have been called "Eskimoid," because they are actually not particularly Eskimo in character. The barbed forms are in fact definitely non-Eskimo, for the only Eskimo who consistently put barbs on their slate lance blades were the people of southwestern Alaska, and this was only after they had been contaminated by Indians.<sup>70</sup> If we feel the urge to use the term "Eskimoid," let us pronounce it with raised eyebrows and rising inflection, but let us abandon it as a descriptive term.

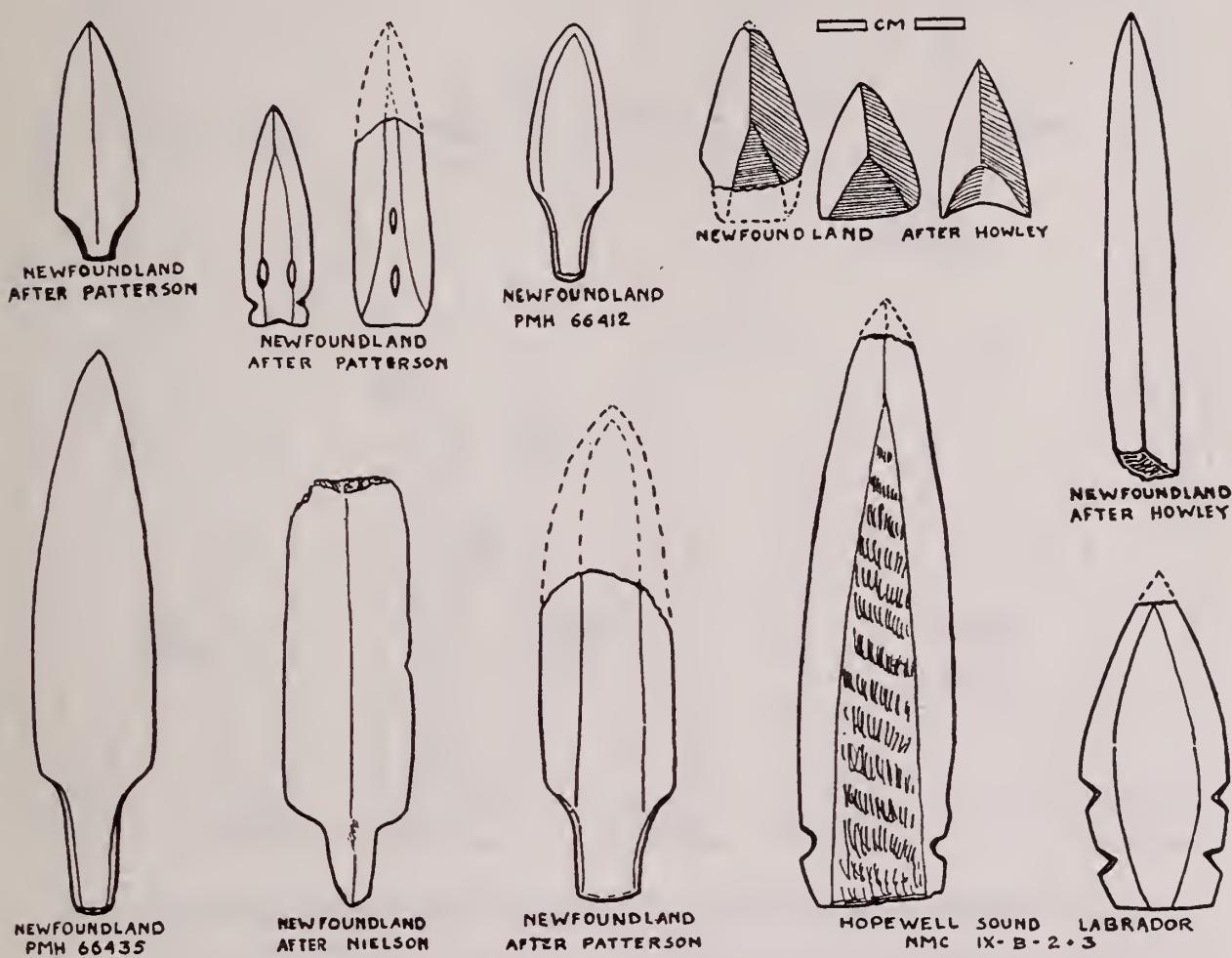


FIG. 16.—Synoptic series of Dorset double-edged slate blades.

The Dorset Eskimo had a number of slate blades to offer their Indian friends (Fig. 16). I shall describe them in the order which I believe follows their genetic relationships, as suggested by the age and distribution of these types outside Dorset culture. The basic type is the leaf-shaped blade with tang, generally lenticular in cross section, but sometimes faceted to produce a flat diamond-shaped cross section. Large ones were used for knives and lances, small ones for harpoon heads. These are known from northern

<sup>70</sup> de Laguna, 1934, pp. 71, 183, 216.

and southern Dorset sites.<sup>71</sup> Sometimes the faceted forms become long and slender.<sup>72</sup> A rather broad southern Dorset form was ground with hexagonal facetting.<sup>73</sup> The smaller leaf-shaped blades may drop the tang and become

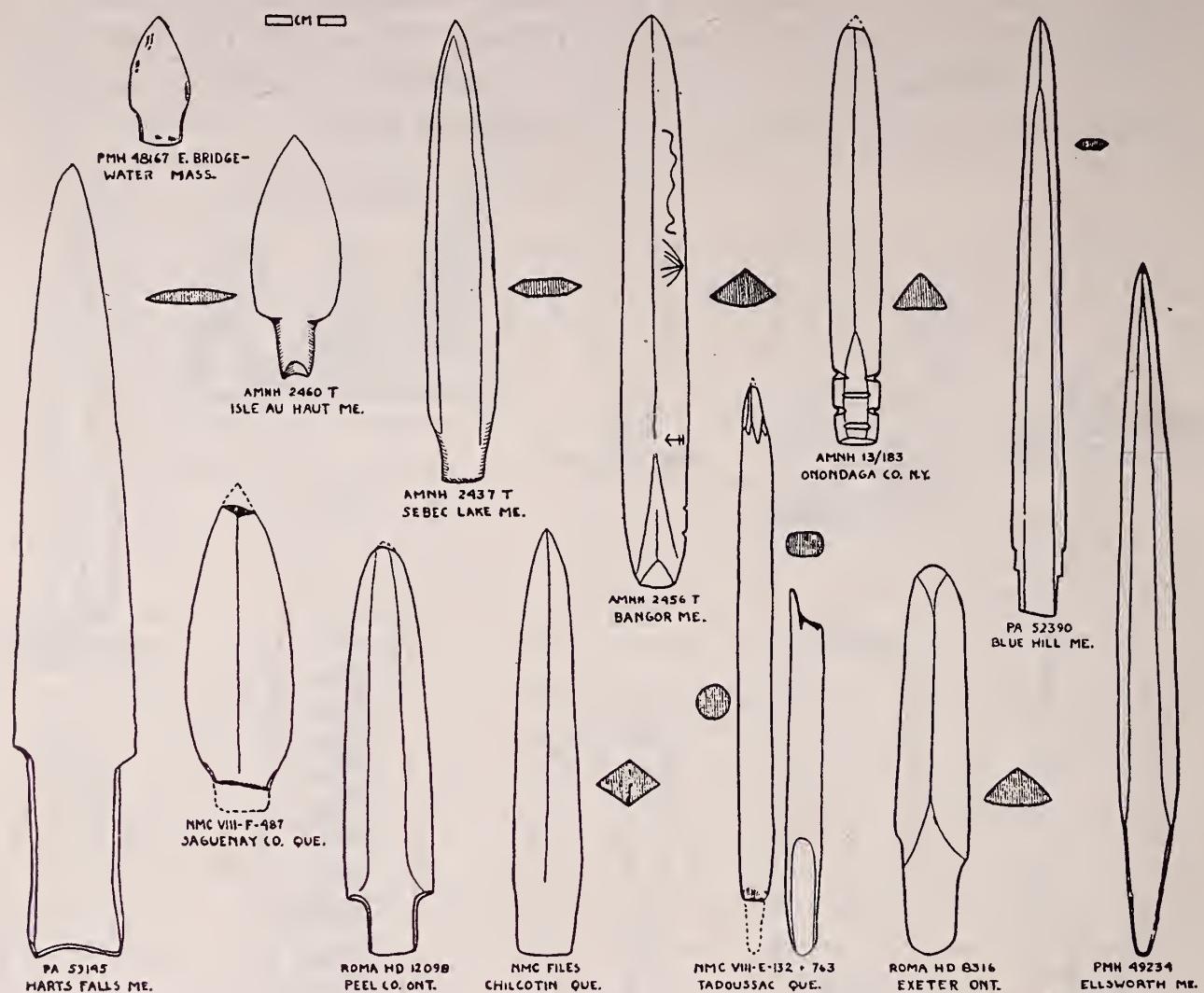


FIG. 17.—Double-edged slate blades without barbs, from Northeastern Indian sites.

triangular, usually with three facets on each face. These were used for harpoon heads, lances and arrows.<sup>74</sup> A variant of the triangular blade, grooved

<sup>71</sup> With lenticular section:

Rowley, 1941, Fig. 2, k; Howley, 1915; Pl. XIX, 4, 5; Wintemberg, 1939-1940, Pl. XVI, 1, 12; PMH 66412, 66435, 67553.

<sup>72</sup> With diamond-shaped section:

Howley, 1915, Pl. XIX, 1, 2, 3, 24; Patterson, 1891, Pl. X, 4; Nielson, 1907, Fig. on p. 35; NMC IX-C-1079, IX-C-353 c, h, IX-C-2665.

<sup>73</sup> Howley, 1915, Pl. XIX, 8; NMC IX-B-56.

<sup>74</sup> Patterson, 1891, Pl. X, 3.

<sup>74</sup> NMC IX-C-353 d, IX-C-425 a, IX-C-1271; IX-B-5, IX-B-199, IX-A-344; Howley, 1915, Pl. XXI, 44; Rowley, 1940, p. 493?.

up each face, with a more or less concave base, was especially characteristic of Newfoundland,<sup>75</sup> and the groove was even applied sometimes to the tangs of leaf-shaped blades.<sup>76</sup> Another Newfoundland variant of the triangular blade is longer and thinner, and is furnished with two cut holes, presumably for sewing the blade onto a harpoon head.<sup>77</sup> The larger leaf-shaped blades

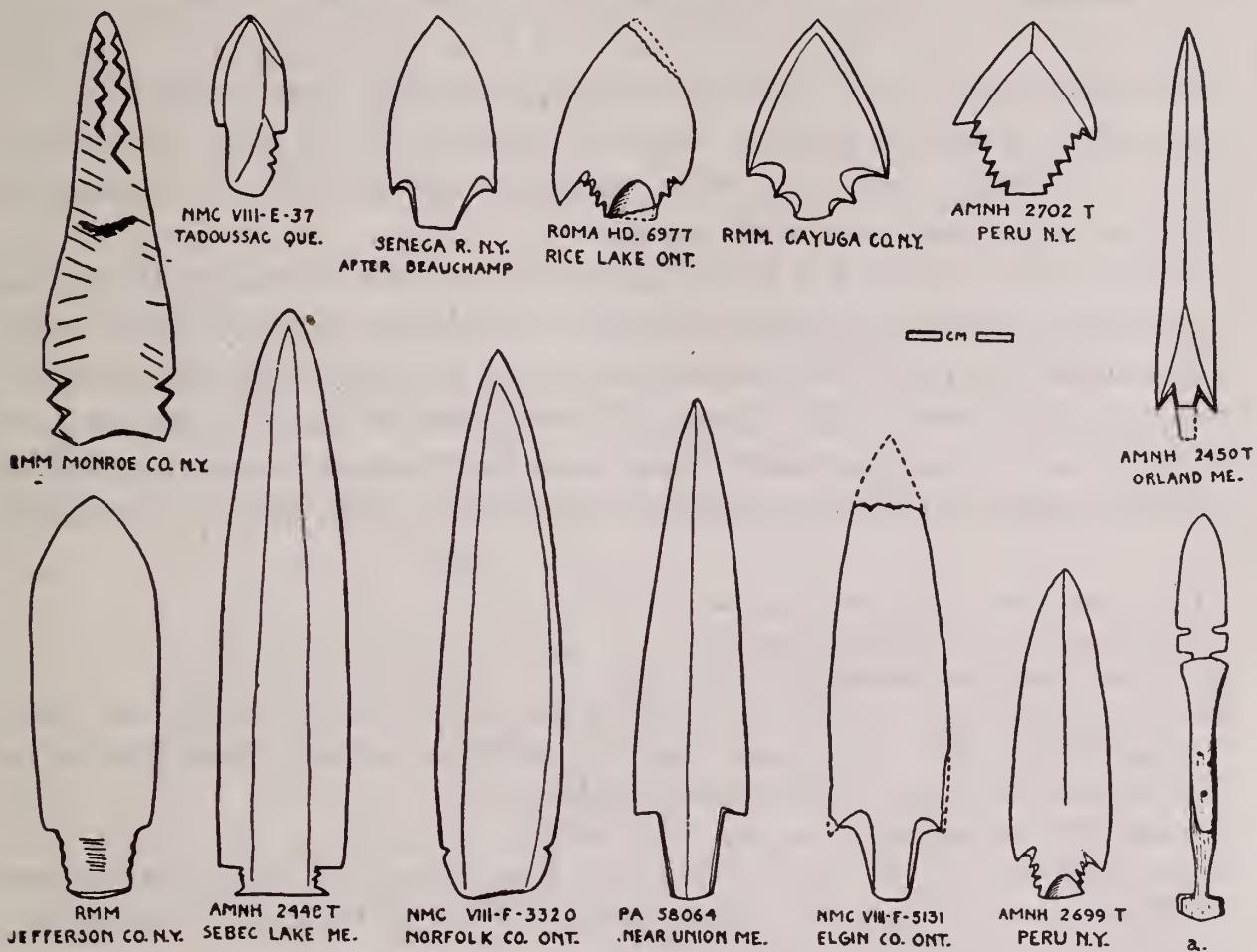


FIG. 18.—Double-edged slate blades with notches and barbs from Northeastern Indian sites. *a.* hafted steel knife, blade notched, West Coast of Hudson's Bay (after Boas, 1907, Fig. 202, *e*).

may also drop the tang. These are generally ground with a very broad hexagonal facetting, and have from one to three pairs of notches sawed into the edges just above the straight base. Such notched blades range from Baffinland to Newfoundland, but are especially characteristic of the Belcher Islands in southeastern Hudson Bay.<sup>78</sup> The notches have become such an

<sup>75</sup> Howley, 1915, Pl. XXI, 32-35; NMC IX-C-353 b from Cape Dorset.

<sup>76</sup> Howley, 1915, Pl. XVI, 11 and 12.

<sup>77</sup> Patterson, 1891, Pl. X, 1, 2; Wintemberg, 1939-1940, Pl. XVI, 1, 11.

<sup>78</sup> NMC IX-C-883, -1265, -1269, -1270, -1268, -1274, -2928; IX-B-2, -3, -46, -70, -339; Boas, 1907, Fig. 181 *b*; PMH 80447; Howley, 1915, Pl. XIX, 19.

ingrained feature of style that modern steel knife blades on the west coast of Hudson Bay still carry them, although they no longer have any function (Fig. 18 a).<sup>79</sup>

Which of these forms did the Indians adopt? The basic type with tang and lenticular cross section is found at Tadoussac in Quebec, in Nova Scotia, New Brunswick, Ontario, Vermont, Red Paint sites in Maine, Massachusetts, Rhode Island, Connecticut, and New York (Fig. 18). Two Red Paint blades and one from Ontario are so large that they could have been used as knives without hafting; the others are smaller.<sup>80</sup> Most of these specimens are without associated artifacts, but should probably be assigned to the Laurentian and to related aspects.

Blades with a broad flat hexagonal section, closely related to these, also come from Nova Scotia, Quebec, Ontario, Red Paint sites, and New York.<sup>81</sup> The variant form with flat diamond facetting has practically the same distribution. On some of the latter, the shoulders are very abrupt and are undercut so as to suggest barbs.<sup>82</sup> Two Red Paint blades, one with lenticular and the other with flat hexagonal section, have copied the Newfoundland

<sup>79</sup> Boas, 1901, Fig. 125 b; 1907, Fig. 202 d, e, f.

<sup>80</sup> Tadoussac, Quebec (NMC VIII-F-160).

Nova Scotia and New Brunswick (NMC files).

Ontario: York Co. (NMC VIII-F-15232); Simcoe Co. (NMC files and ROMA HD 31288); Greenville Co. (NMC VIII-F-9082); Elgin Co. (NMC VIII-F-5128); Prince Edward Co. (NMC files); North shore of Lake Huron (NMC files).

Vermont: (Willoughby, 1935, Fig. 32, c; MAI exhibit).

Maine: Red Paint (AMNH a 459 T; Smith, 1930, Figs. 9, 10; PMH 49214; G-4236, G-4224; Willoughby, 1935, Fig. 33, b, f, g; Rowe, 1940, Pl. XI, f; USNM 6348; PA 50373, 50441, 51136, 57847, 57995); Nevin shell heap (PA).

Massachusetts: Erving (PMH 94349); East Bridgewater (PMH 48167); Cape Cod (USNM 34330).

Rhode Island and Connecticut (MAI exhibit).

New York: Warren Co. (Parker, 1922, Pl. 18, 5); Clinton Co. (AMNH T 2698); Jefferson and Monroe Cos. (RMM files); Onondaga Co. (AMNH 13/43).

<sup>81</sup> Nova Scotia and Saguenay R., Quebec, (NMC files).

Peel and Huron Cos., Ontario (ROMA HD 8460, HD 12098).

Maine: Red Paint (AMNH T 2457 and MAI exhibits); Nevin (PA).

Ulster Co., New York (AMNH 20.0/2336).

<sup>82</sup> Nova Scotia (NMC files).

Saguenay River, Quebec (NMC VIII-E-487).

Tadoussac, Quebec, with rear end broken off (NMC VIII-E-813).

Ontario (Annual Archaeological Report for 1891, Fig. 47; for 1895, Fig. 146; ROMA HD 87)

Maine: Red Paint (AMNH T 2462; Willoughby, 1935, Fig. 33, h, unfinished).

New York: Livingston Co. (AMNH 20.1/3522); Jefferson Co. (two in RMM); St. Lawrence Co. (RMM); Oneida R. (Beauchamp, 1897, Fig. 169).

trick of grooving the tang.<sup>83</sup> The Indians, however, did not adopt the triangular blade with grooved concave base.

Thus the broad leaf-shaped blade with tang was taken over by both interior and coastal groups, and, as the Newfoundland examples are larger than the northern Dorset ones, so, in general, the Indian specimens run still larger than their Eskimo prototypes. Some of the Red Paint blades are so large that I wonder whether they were not made for some ceremonial, non-utilitarian purpose.

Specimens analogous to the Dorset variant that is relatively slender but has a thick diamond-shaped cross section are found in Quebec, classic Red Paint sites, the Taft's Point and Nevin shell heaps, and in New York. These again are larger than the Dorset originals.<sup>84</sup>

The Indians have further developed this last form in three ways. First: an awl-like type, with round, oval or rectangular cross-section, generally with wedge-shaped butt, is characteristic of Tadoussac, in Quebec, and is known from Nova Scotia. It was probably used for killing large sea-mammals, since it is like the awl-shaped slate points used in southwestern Alaska for whales.<sup>85</sup> Somewhat similar forms are known from other sites in the Northeast, but these are usually classified as whetstones, chisels, pendants, spikes for war clubs, etc.

Second: One side of the blade becomes flattened to produce an asymmetric diamond-shaped or a triangular cross section. There is a tendency for the tang to disappear, leaving simply a narrowed and wedged butt. The butt may be notched at the edges and/or across the two faces. This type is found chiefly in the interior of New York and Ontario, and Ritchie mentions two unnotched specimens which probably belong to the Brewerton Focus of the Laurentian. There are also two specimens from Maine, one of which is probably from a Red Paint site. The other point of this type was found in association with an infant burial in the Nevin shell heap. I believe that these are trade pieces from the interior.<sup>86</sup>

<sup>83</sup> AMNH T 2460; Willoughby, 1935, Fig. 33 *a*.

<sup>84</sup> Quebec (NMC files).

Maine: Red Paint (PA 50311; AMNH T 2461); Taft's Point (Hadlock, 1939, Pl. 4 *b*); Water-side shell heap (Rowe, 1940, Pl. XI, *d, e*); Nevin shell heap (PA).

New York (USNM 208036).

<sup>85</sup> Tadoussac (NMC VIII-E-86 several, -132, -133 *a, e, f*, -763 *a*; AMNH 20.1/9043).

Nova Scotia (Smith and Wintemberg, 1929, p. 91).

Cook Inlet and Prince William Sound (de Laguna, 1934, Pl. 36, 12-17, p. 185; erroneously termed "awls" p. 79).

<sup>86</sup> Ontario: Huron Co. (ROMA HD 8316); Several from Renfrew, and one each from Carleton and Lanark Cos. (Wintemberg, 1924).

Third: The blades become very long and slender. They are almost ribbon-like, usually hexagonal in section, less frequently lenticular or diamond-shaped. The butt may narrow and flatten into a wedge, or become a flat tang, set off by slight shoulders. Less frequently the tang is conical, or the butt end simply sharpened. These specimens are known chiefly from the coast. They are found in Nova Scotia, associated with chisels and gouges, and in New Brunswick, and one broken specimen (a trade piece?) comes from the Laurentian site at Vergennes, Vermont. They are most common, however, at classic Red Paint sites and at the Taft's Point, Waterside and Nevin shell heaps.<sup>87</sup> Very similar forms, grading into the awl-like types, were used for marine mammal hunting by the Southwestern Alaskan Eskimo and by the Coast Salish.

As already mentioned, the Indians failed to take over the triangular slate blade, probably because it was used with the harpoon head. I know of only a few Indian leaf-shaped blades without tang, but these are not like the Dorset specimens of the same class. They come from Maine, Vermont, and New York.<sup>88</sup>

There are no Indian specimens very similar to the Dorset leaf-shaped blades with notched edges, though examples which may be related to these have been found in New Brunswick, Ontario, Vermont, Red Paint sites, and New York.<sup>89</sup> There is a strong tendency for such notches to be transferred to the tangs of slate blades, and such specimens are known from Nova Scotia, Tadoussac, Ontario, New York and Red Paint sites. A fragmentary specimen with notched tang and grooved face occurred in the Nevin shell heap. Some of the ribbon-like Red Paint points and some of the

---

New York: Onondaga Co. (AMNH 13/183; Beauchamp, 1897, Figs. 131, 132), Brewerton (Ritchie, 1940b, p. 95, note 1).

Maine: (AMNH T 2456); Nevin (PA, 25/3564 with infant burial in Grave 7).

<sup>87</sup> Nova Scotia and New Brunswick (NMC files).

Vergennes, Vermont (Bailey, 1939, Pl. IV, 7, p. 10).

Maine: Red Paint (PMH 29217, 49234, 49285, 52390, 62298; Smith, 1930, Figs. 7 and 8; Willoughby, 1935, Fig. 34, *i, j, k*); Taft's Point (Hadlock, 1939, Pl. 4 *b*); Nevin (PA 25/3464, 25/3567 with infant burial, and others). Waterside (Rowe, 1940, Pl. XI, *a, c*).

<sup>88</sup> Maine and Vermont (MAI exhibit).

New York: Onondaga Co. (AMNH 13/166); Jefferson Co. (several, RMM files).

<sup>89</sup> New Brunswick (NMC files).

Ontario (Annual Archaeological Report for 1895, Fig. 147); Norfolk Co. (NMC VIII-F-3320); Haldimand Co. (NMC files); Peterboro Co. (Annual Archaeological Report for 1896, Fig. 33).

Vermont (MAI exhibit).

Maine: Red Paint (Willoughby, 1935, Fig. 32, *h*; AMNH T 2452).

New York: Cayuga Co. (AMNH 20.1/671); Jefferson Co. (RMM files); Monroe and Livingston Cos. (RMM); Oneida River (Beauchamp, 1897, Fig. 168).

broader tanged blades from Red Paint sites and the Taft's Point shell heap have serrations on the edge of the blade above the tang.<sup>90</sup>

The Indians were familiar with barbed chipped weapon points, so it was natural for them to put barbs on their slate blades. I know of only one barbed slate blade from Newfoundland, but I doubt that it was Dorset.<sup>91</sup> It may be Beothuk, for Shanawdithit drew a harpoon head with a barbed iron blade.<sup>92</sup> In any case, the more southern Indians developed two main types of slate blade. The first is simply the leaf-shaped blade with shoulders undercut to produce barbs, the other adds notches to the tang (Fig. 18). Both types, but especially the second, include rather broad short forms, with abruptly contracting tangs on which the notches appear like additional small barbs.

The barbed type with plain tang is found in Ontario and New York, where it is very common, and is also known from Vergennes and elsewhere in Vermont, from Connecticut, from the Nevin shell heap, and from Red Paint sites.<sup>93</sup> A special variant, short, very slender, with long diverging barbs, is peculiarly characteristic of the Red Paint culture.<sup>94</sup>

The barbed form with notched stem is also very common in Ontario and

<sup>90</sup> With notched tang, unless otherwise noted:

Nova Scotia (several in NMC files).

Ontario: Huron Co. (ROMA HD 459 a, b); Lanark Co. (Annual Archaeological Report for 1894-1895, Fig. 55).

Quebec: Tadoussac (NMC VIII-E-37).

New York: Oswegatchie R. and Jefferson Co. (RMM).

Maine: Red Paint—notched tang (Willoughby, 1935, Fig. 33, c; AMNH T 2448, 2449);—slender form with notched blade (PA 52422; Willoughby, 1935, Fig. 34, g, h);—broad form with notched blade (Willoughby, 1935, Fig. 34 f); Taft's Point—with notched blade (Hadlock, 1939, Pl. 4, b). Nevin shell heap—(PA 3/748).

<sup>91</sup> Neilson, 1907, Fig. on p. 35, from Newfoundland or Labrador.

<sup>92</sup> Howley, 1915, Pl. VIII.

<sup>93</sup> Ontario: (ROMA HD 7480, 7973); York Co. (Annual Archaeological Report for 1917, Fig. 3746); Simcoe Co. (ROMA HD 31287); Peterboro Co. (ROMA HD 6953, 16082); Greenville Co. (NMC files); Northumberland Co. (NMC VIII-F-15233); Elgin Co. (NMC VIII-F-5129, -5130, -5131); Frontenac Co. (RMM files).

New York: Jefferson Co. (5 in RMM or files); Monroe, Ontario, Cayuga Cos. (RMM); Onondaga Co. (Parker, 1922, Pl. 18, 2, 3; Beauchamp, 1897, Fig. 173; AMNH 13/59); Seneca River (RMM: AMNH D/MI 881; Beauchamp, 1897, Figs. 164, 171); Frontenac Island (Ritchie, 1939a, Pl. 2, 19).

Vermont: (Willoughby, 1935, Fig. 32, d, e; MAI exhibit); Vergennes (Bailey, 1939, Pl. IV, 6). Connecticut: (MAI exhibit).

Maine: Red Paint (PA 58064, 59150); Nevin (PA).

<sup>94</sup> PMH 4234, 50870 a, b; PA 52386; AMNH T 2450; MAI exhibit; Willoughby, 1935, Fig. 34, a-e.

New York. Many of the short, stumpy specimens from Ontario were found associated with gouges, adzes, chisels, plummets, and native copper, suggesting a Laurentian complex. One of the New York specimens came from an Oneida River site that was rich in barbed bone points. They are also known from Vermont.<sup>95</sup>

These slate blades thus appear to have been diffused along two routes, one down the coast, the other up the St. Lawrence and south along interior waterways. Special variants developed on the coast and in the interior. One has the feeling that these blades were used chiefly for hunting aquatic animals, although the broad leaf-shaped blades with tang may have been knives. Whenever we find evidence of a cultural association they appear in a Tadoussac-Red Paint-Laurentian horizon. Unlike the slate ulo, they have not traveled beyond the home territories of these cultures. With more excavated material it would be profitable to study detailed variations which I have not mentioned. The incised decorations which occasionally appear might also tell us something about routes of diffusion. Such decoration is an Indian, not an Eskimo feature.

One occasionally finds single-edged knife blades of slate on Indian sites. While this is a widely distributed Eskimo type, and is found, for example on the Belcher Islands in southeastern Hudson Bay, we cannot yet prove that it was made by the Dorset Eskimo, although this would be a reasonable assumption. The type is known from Ontario, New Hampshire, Red Paint sites in Maine, and from New York. The careful attention to the finger notches on the New Hampshire specimen is exhibited by many Eskimo implements.<sup>96</sup>

No discussion of Dorset culture would be complete without a mention of

<sup>95</sup> New Brunswick (MAI exhibit).

Ontario: (ROMA HD 123 to 125, 6951, 6960, 6970, 6977, 7481, 7482); Simcoe and Frontenac Cos. (NMC files); Norfolk Co. (NMC VIII-F-5133); Peterboro Co. (ROMA HD 7958, 6966); Peel Co. (ROMA HD 10484); Lanark Co. (NMC VIII-F-15399); Elgin Co. (NMC VIII-F-5127); Carleton Co. (NMC VIII-F-15665, -15234).

Vermont (Willoughby, 1935, Fig. 32 a, b, f, g).

New York: Jefferson Co. (at least 15: RMM and files, AMNH 2793); Monroe Co. (2 in RMM); Livingston Co. (RMM); Cayuga Co. (RMM, USNM 32639); Clinton Co. (AMNH T 2699 to 2702); Onondaga Co. (Parker, 1922, Pl. 18, 1, 4; USNM 32294); Chenango Co. (Beauchamp, 1897, Fig. 166); Seneca River (Beauchamp, 1897, Figs. 161, 167, 175); Oneida River (Beauchamp, 1897, Figs. 176, p. 66).

<sup>96</sup> Ontario (RMM AR. 7.2.09/20779; Annual Archaeological Report for 1894-1895, Fig. 50).

New Hampshire (Willoughby, 1935, Fig. 35, c).

Red Paint, Maine (Willoughby, 1935, Fig. 35, b).

Adams Center, Jefferson Co., New York (RMM AR. 7.1.07/18004).

the numerous blades of chipped stone. In their greater reliance upon chipped than upon ground stone blades, the Dorset resemble the oldest Alaskan Eskimo, and the Dorset stone tradition has lasted on in the Hudson Bay area into modern times.

Dorset tools for working chert include the bone pressure flaker and the bone or antler cylindrical piece used for indirect percussion. As far as I know, the latter type is not found in other Eskimo cultures, and must, therefore, have been derived from the Indians.<sup>97</sup> In the northern Dorset area, primary flaking was done with a hafted hammer of bone or antler; in Newfoundland, cylindrical hammerstones were used, some of which were also hafted.<sup>98</sup> I believe that the production of large stone blades, a characteristic of southern Dorset sites, is related to the use of the hammerstone. Any comparison of Dorset and Indian chipped implements should include a consideration of the methods by which they were shaped—by direct or indirect percussion, or by pressure flaking. Although I have examined many Eskimo and Indian stone specimens, unfortunately I did not do it with this question in mind, and furthermore I do not feel qualified to distinguish the results of the different techniques. I have not been assisted by the habit of so many archaeologists of lumping together under the same vague term, "flaker, punch, knapping tool," etc., quite different types of bone tools, without specifying whether the tool was simply pressed against the stone, or whether its butt end was struck with a hammer. I can only compare gross features of Dorset stone types with those of the Indians, conscious that this is inadequate.

<sup>97</sup> *Pressure flaker:*

Old Bering Sea (Collins, 1937, Pl. 30, 9, etc.); Kachemak Bay I to III (de Laguna, 1934, p. 99); New York Archaic (Ritchie, 1936b, p. 12 and Pl. X, 13, 14, Pl. XII, 12); Laurentian (Ritchie, 1940b, Pl. XXIX, 63).

*Cylinder for indirect percussion:*

Laurentian-Archaic of Frontenac Island (Ritchie, 1939a, Pl. 2, 28, 29, and communication from author); Brewerton Laurentian (Ritchie, 1940b, Pl. XXIX, 65); Point Peninsula (Nichols, 1928, Pl. 1, 22); Northern Coastal (Willoughby, 1935, Fig. 122, m, n, o); Iroquois (Wintemberg, 1928, p. 89; Skinner, 1921, p. 82); Northern Dorset (Rowley, 1940, Fig. 1, g); Newfoundland Dorset (Wintemberg, 1939–1940, Pl. XVI, Fig. 2, 10); Nevin shell heap, Blue Hill, Maine (PA).

While the pressure flaker is an ancient Eskimo and Indian type, the cylindrical bone tool for indirect percussion is not known from the Northeast before the first beginning of the Laurentian, although it became a common possession of all the Northeastern Indian cultures after that time.

<sup>98</sup> Wintemberg, 1939–1940, p. 309, Pl. XV, Fig. 2, 2, 3, 4. Hammerstones are rare on Eskimo sites as Wintemberg points out. Thus Collins (1937, p. 155, Pl. 43, 14) mentions only one from St. Lawrence Island although the Old Bering Sea culture was rich in chipped stone tools.

It is not necessary to say much about the chipped end-scraper or the leaf-shaped blade with tang (Fig. 19 a-c, m). Although these may be finished in ways peculiar to each culture, the types themselves belong to that ancient Ice-hunting substratum which underlies all the cultures we have mentioned. The Dorset sometimes made end-scrapers from broken side-notched blades. I have seen stray specimens like these from several

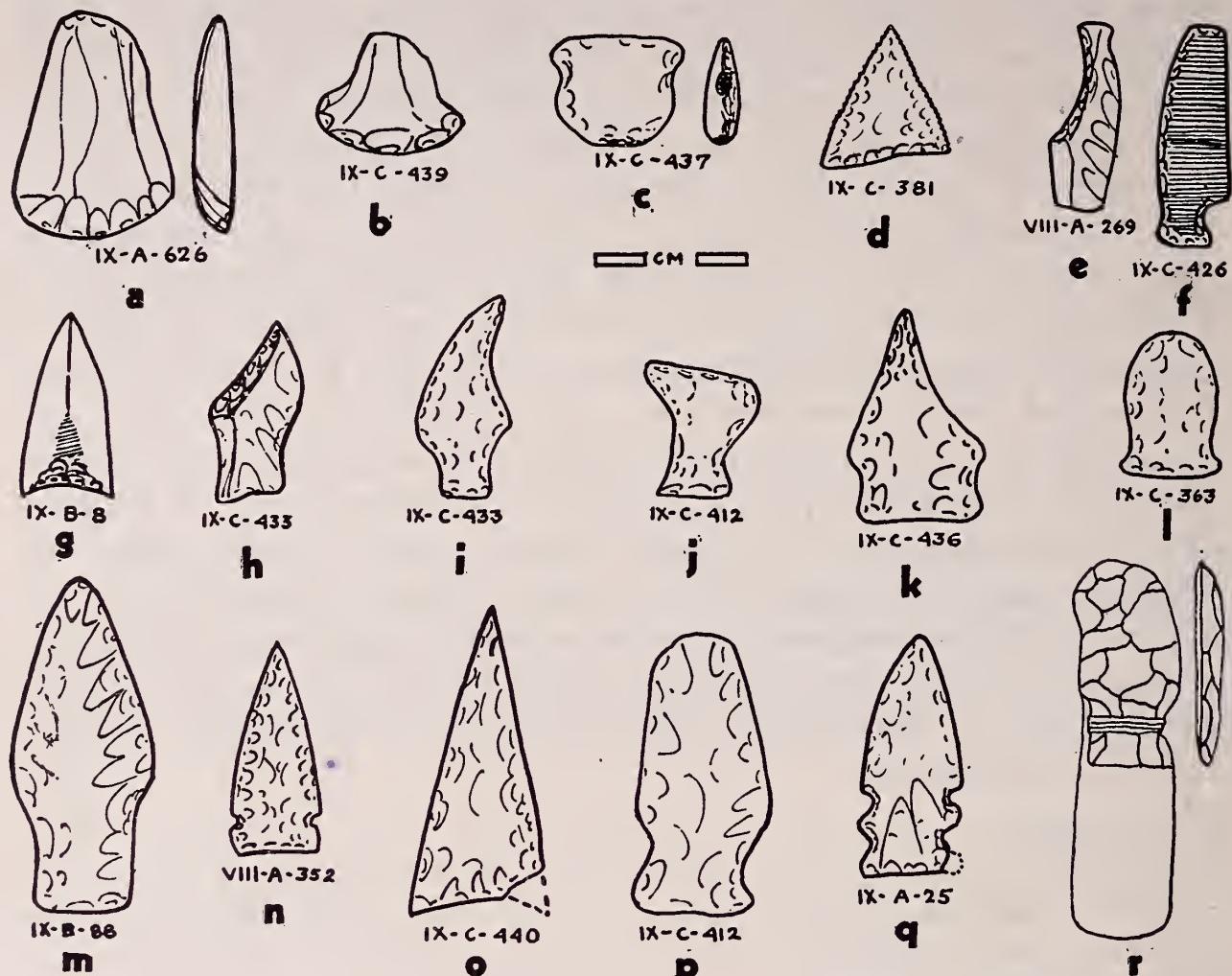


FIG. 19.—Synoptic series of Dorset chipped stone artifacts; specimens from NMC;  
r, after Boas, 1907, Fig. 182, e.

northern states and provinces, and the type occurs in the Laurentian.<sup>99</sup> The leaf-shaped blade with tang is especially common on northern Dorset sites where it was finished with a fine serration along the edges and used for projectiles. A large form, probably a knife blade, is characteristic of Newfoundland and is also known from Vergennes and from the Red Paint culture.<sup>100</sup>

<sup>99</sup> Bailey, 1939, p. 18; Ritchie, 1940b, p. 34.

<sup>100</sup> Bailey, 1939, Pl. V, 127; Willoughby, 1935, Fig. 31.

The Dorset made two other types of projectile point. One of these is a leaf-shaped or triangular blade with side notches (Fig. 19, n). It is found on the Aleutian Islands, in the Laurentian, and occasionally in Maine shell heaps.<sup>101</sup> A variant, especially common in Newfoundland, with two or three pairs of notches (Fig. 19, q.), is also known from the Aleuts and from Brewerton.<sup>102</sup> I suspect that this side-notched blade may be an old Eskimo type, taken over by the Indians.

The third main type of projectile point is a triangular blade, generally longer than it is wide, frequently very narrow, with a concave base and often with delicately serrated edges (Fig. 19, d, o). It runs through a considerable range of sizes. Wintemberg feels that most of the triangular blades found on Iroquois and Algonkian sites are different from the Dorset specimens because the Indian ones are broader and are shaped more like an equilateral triangle.<sup>103</sup> Some of the Laurentian and Point Peninsula blades, on the other hand, are rather like the Dorset. These may all be related, but I do not know how. A variant of the triangular blade, especially characteristic of Newfoundland, is made with a medial ridge on one face. The two facets are the scars produced by detaching flakes from the original block of flint before striking off the flake which was to be made into the blade. The other face of the blade is retouched in the usual way. Such blades are not found on Indian sites. The specimen illustrated also shows a trace of grinding. (Fig. 19, g)

The Dorset Eskimo were rich in knives or knife-like scrapers, made from a flake retouched on one or on both faces (Fig. 19, e, b, h-h, l, p). The basic type with asymmetric rounded end has lasted on into recent times in Hudson Bay (Fig. 19, r). Quite similar specimens may be found in the Old Bering Sea culture or on the Aleutian Islands, but I know of no Indian duplicates.<sup>104</sup> These Dorset knives may become quite straight across the end, again a form unknown from any other culture, or they may become more and more pointed until they appear as sharp implements for cutting holes. Rather similar pointed knives are known from the Brewerton Focus of the Laurentian.<sup>105</sup> Other knives become so curved that they may have concave cutting edges, a type known from the Aleutian Islands and from

<sup>101</sup> Jenness, 1940, p. 8; Bailey, 1939, Pl. V, 55-75; Ritchie, 1940b, Pl. VIII, 29-87.

<sup>102</sup> Jenness, 1940b, p. 8; Ritchie, 1940b, Pl. XIII, 59.

<sup>103</sup> Wintemberg, 1939-1940, p. 95. But compare Dorset blades with: Bailey, 1939, Pl. V, 10, 15-28, etc.; Ritchie, 1937, Fig. 8, 17; Ritchie, 1940b, Pl. XV, 2, 10, 11, 13, 20, 24, especially.

<sup>104</sup> Boas, 1907, Fig. 202, d, e, f; Collins, 1937, Pl. 40, 12; Jochelson, 1925, Fig. 34, b. Bailey, 1939, Pl. V, 48, approaches this type.

<sup>105</sup> Ritchie, 1940b, Pl. VIII, 39, 67, 82.

Brewerton.<sup>106</sup> Sometimes the working edge becomes straight but is steeply retouched, producing an asymmetric scraper. This is also known from Brewerton.<sup>107</sup> In these Dorset knives we seem to have a very old group of forms, which like the Dorset harpoon heads, point back to an ancient horizon in the North Pacific area.<sup>108</sup>

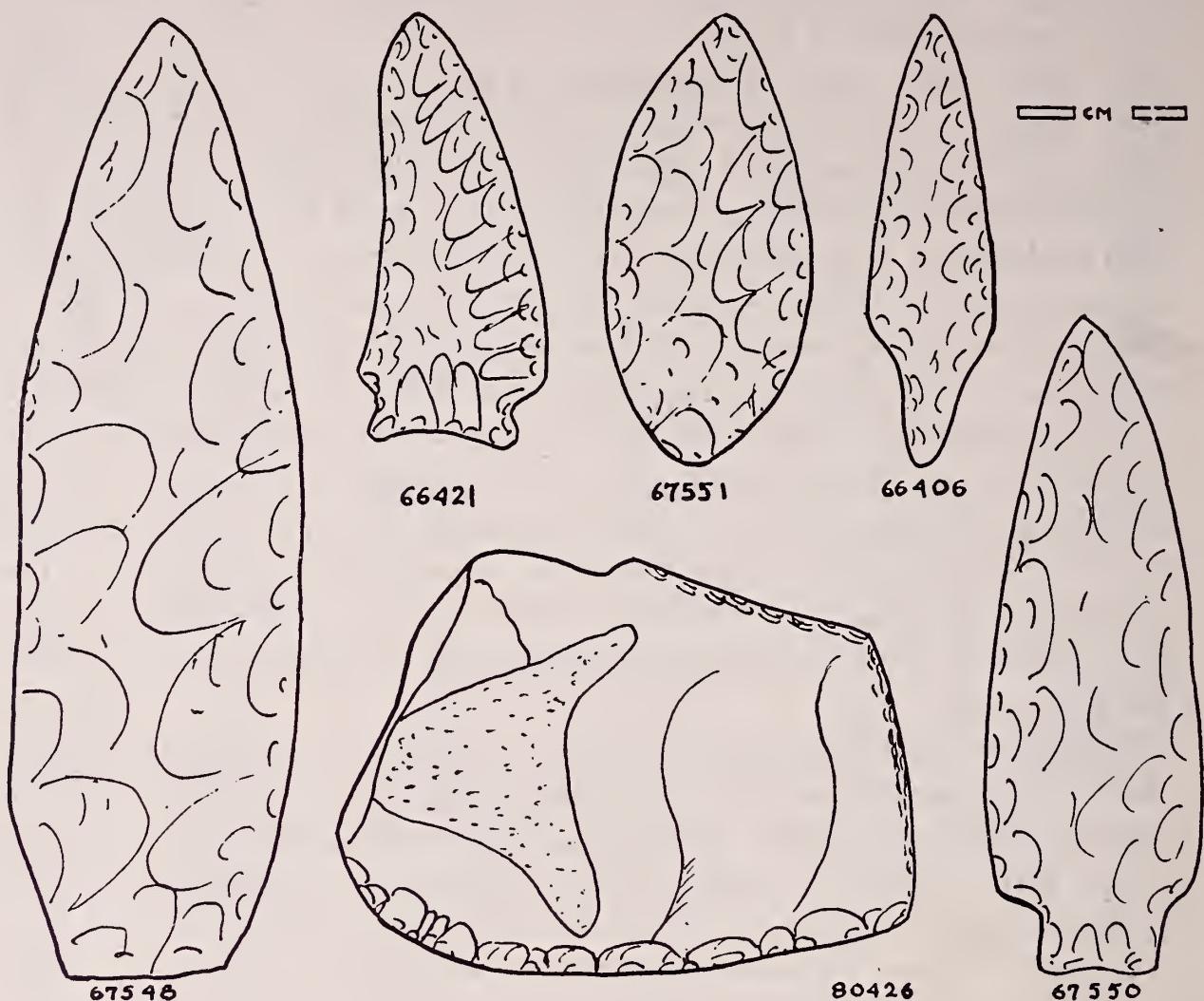


FIG. 20.—Large chipped stone blades from Newfoundland. Specimens in PMH.

The Dorset, like the Old Bering Sea Eskimo,<sup>109</sup> made side-scarpers with concave edge, and sometimes equipped these with side notches. This type has been found at Brewerton, probably as a result of Dorset influence.<sup>110</sup>

Newfoundland is characterized by a number of large chipped blades,

<sup>106</sup> Jochelson, 1925, Pl. 16, 17, Pl. 15, 36; Ritchie, 1940b, Pl. XXV, 17, 18.

<sup>107</sup> Ritchie, 1940b, Pl. XV, 46.

<sup>108</sup> Compare these Dorset knives with Ainu types (Ohyama, 1932, Figs. 15, 16, 17, 18).

<sup>109</sup> Collins, 1937, Pl. 41, 22.

<sup>110</sup> Ritchie, 1940b, Pl. XV, 48, Pl. XXV, 7.

probably for knives, and related, as I have suggested, to the use of the hammerstone (Fig. 20). These are the large leaf-shaped blade with tang, already mentioned, and large symmetrical or asymmetrical blades with side notches. These last are known from the Nevin shell heap and from the Red Paint and Laurentian cultures.<sup>111</sup> Other large Newfoundland Dorset forms are leaf-shaped blades with pointed, rounded, or straight bases, and these have their counterparts from Tadoussac, Red Paint and Laurentian sites.<sup>112</sup> Large flakes retouched along one edge to be used as ulos or side-scrappers occur at Tadoussac, the Nevin shell heap, and occasionally in later shell heaps in Maine.<sup>113</sup> The similarity between the large Newfoundland and the large Red Paint blades is increased by the fact that many in both cultures are made of the same translucent smoky quartz or quartzite that Willoughby thinks was obtained from Labrador.<sup>114</sup>

The most characteristic Dorset stone type was not adopted at all by the Indians. This is a blade of nephrite, flint, or sometimes slate, chipped out first and finished by grinding. Both faces were ground flat. One edge (the back) was usually left chipped and probably fitted into a grooved handle; the chipped or ground notch generally found on the opposite (outer) edge near the base evidently held the lashing. The edge above the notch and sometimes the edge across the upper end were ground flat. It has been suggested that this little implement was used for scraping or for setting the creases in boot soles, but I believe that it was used for cutting grooves in bone. The two corners at the upper outer edge would have been used; certainly the specimens often have this part of the blade broken off. If my hypothesis is correct it would correspond in function to the chipped stone "burins" or gravers of the Upper Paleolithic of Europe. The only relatives of this Dorset implement come from the Old Bering Sea culture, unless we include two peculiar slate blades with sharp points but blunt edges from Kachemak Bay III in southwestern Alaska.<sup>115</sup> We should note, however, that the technique of grinding hard stone was taken over by the Laurentians, for some of the notched flint blades from Brewerton and Vergennes have rubbed or

<sup>111</sup> Ritchie, 1940b, Pl. XXV, 37, 92; Willoughby, 1935, Fig. 30e; PA 52479; AMNH 20.0/3350; reported with a trace of grinding from the Nevin shell heap (PA).

<sup>112</sup> Tadoussac (NMC VIII-E-784, etc.).

Brewerton (Ritchie, 1940b, Pl. XXV, 36, Pl. XV, 58, etc.).

Red Paint (Willoughby, 1935, Fig. 30a; PA 50668, 51088, 58838).

<sup>113</sup> Tadoussac (NMC VIII-E-820, etc.).

Nevin shell heap (PA).

Northern Coastal, Maine (PA 57427).

<sup>114</sup> Willoughby, 1935, explanation of Fig. 31.

<sup>115</sup> Collins, 1937, Pl. 39, 19-22; de Laguna, 1934, Pl. 32, 12.

ground bases. A large side-notched blade from the Nevin shell heap shows traces of grinding at the point.<sup>116</sup>

I am rather surprised that this survey of Dorset stone types suggests that they were loaned to the Indians, for I had supposed when I began this study that the borrowing had been done by the Eskimo. Why have the Eskimo given so much to the Indians and received so little? The only types which I am sure that they took from the Indians were the snowshoe needle (if my interpretation of Dorset and New York Archaic specimens is correct),<sup>117</sup> the cylindrical tool for indirect percussion, one axe grooved across the top,<sup>118</sup> and a few plummets.<sup>119</sup> If the gouges found on Newfoundland Dorset sites were actually used by the Eskimo then we must credit the Laurentian-Red Paint groups or their near relatives with having given this useful tool to the southern Eskimo.<sup>120</sup>

But this does not explain why the Dorset did not take more. Were they a smug, self-satisfied group, too conservative to appreciate what others made? Were they so technically competent and so rich in beautifully made tools and weapons that Indian craftsmen seemed poor and clumsy? The Indians were certainly avid borrowers, but they also liked large tools, so that again and again they copied the little Dorset implements in larger forms. This increase in size is reflected to some extent by the Newfoundland Dorset, probably as a result of Indian contacts.

From this brief survey we can see that the group of cultures which includes the Laurentian, the Red Paint, and Tadoussac is of hybrid origin, and that some of the most distinctive features stemmed originally from an Eskimo source. A further analysis of the non-Eskimo traits would reveal, I suspect, at least two sources for these: one group derived from the antecedent Archaic, and another group of traits, including especially copper and pottery, diffused from more advanced Indian cultures to the south and

<sup>116</sup> Ritchie, 1940b, p. 27; Bailey, 1939, p. 16; Nevin (PA, 3/507).

<sup>117</sup> Cape Dorset (NMC IX-C-235 a).

Coats or Mansel Islands, Hudson Bay (NMC IX-C-460 a, b, c).

Northern Labrador (NMC IX-B-117).

Archaic New York (Ritchie, 1936b, Pl. X, 2).

<sup>118</sup> Strathcona Sound, northern Baffinland (NMC IX-C-552).

<sup>119</sup> Cape Dorset (NMC IX-C-391, 2554, grooved around middle; IX-C-553 and MAI 15/8153, two grooves at right angles around middle).

Newfoundland (Wintemberg, 1939-1940, p. 330; Howley, 1915, Pl. XXII, 24-28; grooved around one end, or grooved around and across one end).

<sup>120</sup> Wintemberg, 1939-1940, p. 330. He also mentions long slender stone adzes, like those found at Tadoussac. The material found by Strong (1930) on the east coast of Labrador seems to be basically Dorset with similar scanty Indian additions.

west. The differences between the Laurentian proper, Red Paint, and Tadoussac are thus to be explained by pre-existing differences between the various local Archaic configurations which underlay them and by differences in what they absorbed from the outside. To stress the hybrid origin of the Laurentian Aspect and its relatives is not, however, to deny that these were integrated cultures. It does mean that we are not to interpret the term "Aspect" as meaning that the Laurentian was an autochthonous growth which evolved through an independent, self-stimulated differentiation from a Woodland or an Archaic Pattern.

Nor do I believe that we are to interpret the various modern and ancient configurations of Eskimo culture simply as temporal and regional variants of one ancient common "Eskimo Pattern." As we probe back into the past we find an ever increasing diversification of Eskimo culture. "Eskimo Culture" (in the singular), meaning a common way of life, is probably a relatively recent fabric, into the making of which have been interwoven many different strands of diverse origins, none of which was originally "Eskimo." We deal not with the problem of a single beginning, but with a series of processes by which "Eskimo cultures" were formed through fusion, precipitation and crystallization. The ancient Ice-hunting horizon, which I have mentioned at the beginning of this essay, was not the one common source of all northern cultures, once existing as a homogeneous substratum, but was, rather, a whole series of locally distinct cultures, alike only in exhibiting similar designs for living. If we assign to this series certain elements, like the bone awl or the spear thrower, we do not mean that a single one of these traits was necessarily possessed by all of these cultures; it is rather that each of these cultures was likely to have owned a large selection of these traits. The diversity of human cultures is probably as old as Human Culture itself.

I should like to close by quoting from the conclusion of the Abbé Breuil's pioneering study of the Upper Paleolithic of Europe. What the great French prehistorian wrote in 1912 can be applied to our problems of Northeastern Indian archaeology.<sup>121</sup>

"We are no more able to speak of a single Neolithic civilization, despite the fund common to them all, than we were able to study a continuous evolution of successive phases of the Paleolithic. Everywhere the reality was more complex than a first glance seemed to show, and this is in spite of the indefinite harmony between the particular evolutions which helps to conceal their autonomy . . . .

<sup>121</sup> Breuil, 1913, pp. 237 f, (my translation.)

"Thus, . . . the phylogeny of industries forces the continual admission of multiple origins; none of the civilizations which developed in our western Europe can be termed autochthonous in the full sense of the word; all have their roots in neighboring continents where their first stages have undergone an evolution of which we are still often ignorant. Studies of prehistory have yet enormous fields to explore, and the investigations which we have undertaken already make us understand that these vast spaces hide in their caves, their alluvial deposits and their loess, the solution to those problems of origins which we cannot solve in Europe, that little peninsula fastened onto Africa and Asia."<sup>122</sup>

BRYN MAWR COLLEGE  
BRYN MAWR, PENNSYLVANIA.

<sup>122</sup> My *Prehistory of North America as seen from the Yukon*, to appear shortly as Memoir No. 3 of the Society for American Archaeology, deals at greater length with some of the problems treated in this essay, and also follows the methodology discussed on page 110.

# NORTHEASTERN ARCHAEOLOGY AND GENERAL TRENDS IN THE NORTHERN FOREST ZONE

ALBERT CLANTON SPAULDING

THE great circumpolar belt of coniferous forest, the boreal forest zone, is of particular interest to students of American culture history because of its geographical position and its ecological and cultural characteristics. In the Northeast the presence of the zone in northern New England and Canada makes its study of direct relevance to the problems of the area.

The boreal zone of coniferous forest extends from the northeastern part of North America through Canada and Alaska, Siberia, and on to the Atlantic in northern Europe (Fig. 21). The most important barriers within the zone are Bering Strait, the mountains separating the Yukon and Mackenzie drainages, and perhaps the mountains of eastern Siberia. Throughout most of this enormous range the northern boundary is formed by the relatively narrow strip of Arctic tundra; the southern boundary is far less uniform, as might be expected, since it cuts through the interior of three continents. On the east and west in Eurasia the mixed deciduous forest merges with the conifers in the Baltic, central Russian, and Amur regions, but in the drier interior the steppes of eastern Russia and southwestern Siberia approach the southern limit of the taiga (as the zone is called by the Russians) in the west, and farther to the east the central Asian mountain ranges separate the boreal forest from the arid steppes and deserts of Outer Mongolia. The fifty-fifth parallel of north latitude is a rough approximation of the southern forest boundary in Europe and Asia. In America, maritime influences also are apparent on the east and west; on the north Pacific coast the boreal forest meets the exuberant coniferous associations of that area, while from the Great Lakes to the Atlantic a transition to the northeastern hardwoods exists. In the west-central area the Great Plains stretch well into Canada to form the southern limit of the forest.

Throughout the entire zone, both in Old and New Worlds, spruce and fir are probably the most characteristic trees, with various pines and larches also numerous. A few cold-tolerating deciduous species are found in most parts of the zone, birch and willow being the most prominent; the deciduous trees are usually found under special ecological conditions, as in burned areas. The basic factors underlying this circumpolar unity of vegetation

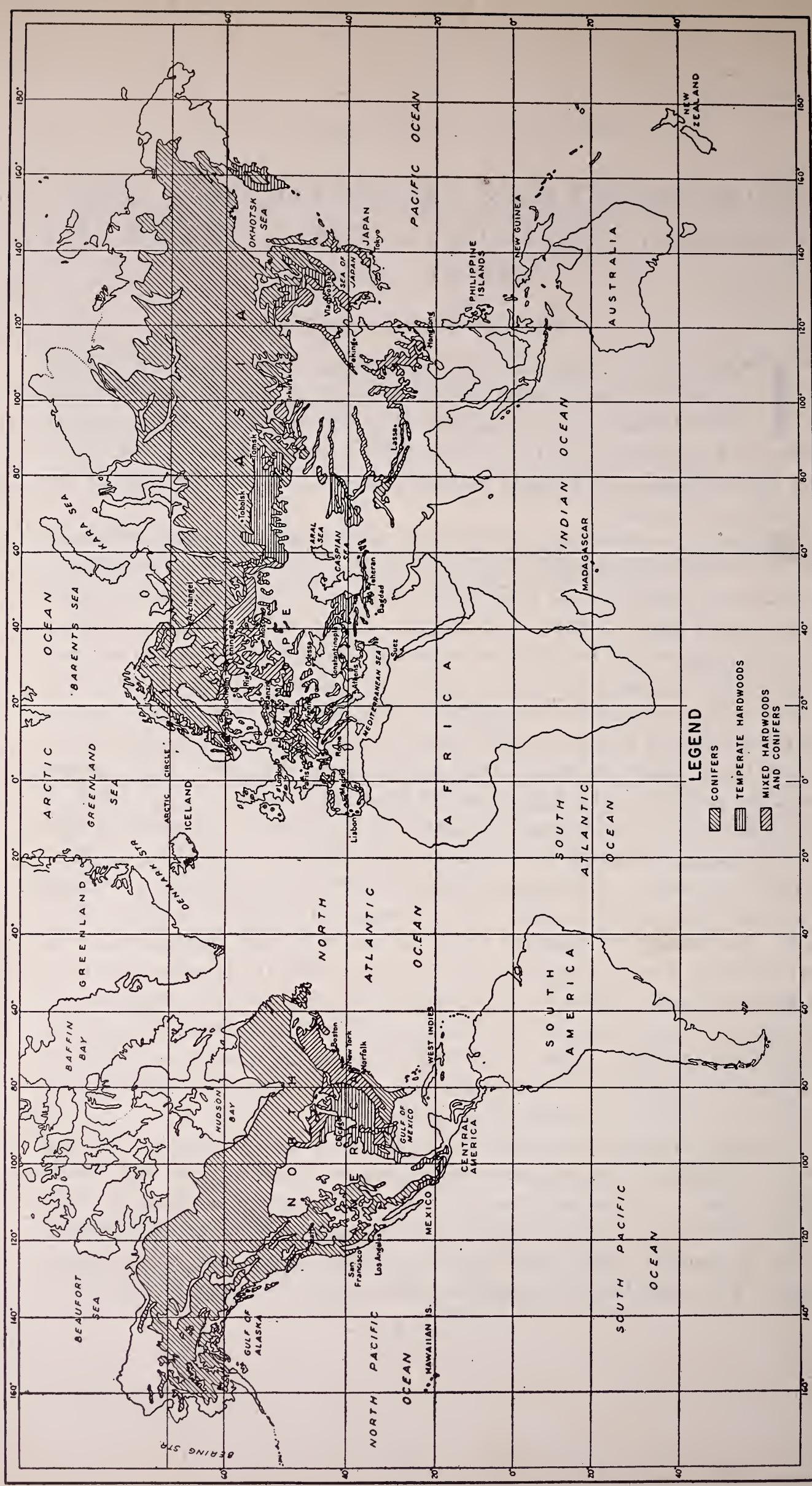


FIG. 21.—Forest Regions of the Northern Hemisphere. (Basic data from Plate I, Volume I of *Forest Resources of the World*, by Raphael Zon and William N. Sparhawk. New York, 1923.)

are primarily climatic. The long, cold, and physiologically dry winters constitute an effective barrier to the deciduous associations which are able to dominate farther to the south. The xerophilous structure of the needles and the thick bark of the conifers prevent excessive transpiration and permit them to survive under extremely severe conditions. Even the conifers, however, require a fairly warm period during the summer for successful growth; this does not exist close to the northern oceans and nearly everywhere a band of tundra intervenes between the forests and the coast. The drastic selective action of the environment has resulted in great stands of timber representing very few species, a condition which seems to be reflected in the fauna.

Animal life within the coniferous zone affords further evidence of biological similarity in the three continents. Squirrels and hares, certain other rodents, a number of mustelids, and many birds are characteristic of the entire range. The large mammals common to the whole zone include the bear, elk or moose, reindeer (caribou in America), wolves and foxes, and in the southern part of the zone members of the genus *Cervus* (red deer and wapiti). Porcupines and skunks are confined to America, while Siberia has a wild dog and Europe a wildcat which have no close relatives in the New World. Asia and America have in common a large feline, the lynx, but the Siberian tiger and the American mountain lion are restricted to their respective continents, and to the southern fringe of the taiga in each case.

Much of the area was involved in the Pleistocene glaciation, and as a result, the drainage is poorly developed, with numerous lakes and swamp areas. Fish are fairly plentiful throughout the zone and the lakes and streams are also the home of beaver and muskrat.<sup>1</sup>

The significance of the geographical position of the boreal forest is obvious. Any inland groups migrating from Asia to America through the Bering Strait region must have at least passed through great areas of forest before reaching America, and would encounter a very similar environment there. Consequently, it seems legitimate to assume that most of the migrants possessed a culture adapted to the limitations and resources of the forest zone. Exceptions might be groups which migrated before the development of the boreal forest, in late glacial or early post-glacial times, or strictly littoral peoples. The present knowledge of the forest history of northern Asia and America does not appear to indicate any radical differences between the climatic and ecological zones of the present and those of the past several

<sup>1</sup> The summary of the ecology and geography is based largely on Schimper, 1903; Haviland, 1926; Stamp, 1929; Hesse, 1937; and Kroeber, 1939.

millennia, although it is evident that conditions were by no means stable during this period.

Under these circumstances, the cultural implications of the boreal environment are of considerable interest. Perhaps the most important fact is the impossibility of agriculture under aboriginal conditions. Thus in North America maize cultivation attained its most northerly distribution on the edge of the boreal forest in the Great Lakes region, the St. Lawrence Valley, and northern New England and the Maritime Provinces of Canada. In Siberia a certain amount of agriculture penetrated to the southern border of the taiga where it reaches to the south in the valleys of the Central Asian mountains; here some deciduous forest is also present. Hunting and fishing have always been the main economic activities of groups which draw their primary subsistence from the coniferous forest, and even under the impact of modern exchange economy the hunting pattern has been retained because of the fur trade. Lumbering and mining seem to be the only other important innovations. If the influence of modern transportation and exchange are deducted it is evident that there is no alternative to hunting and fishing. The reindeer breeding of the Siberian forest tribes is an apparent exception, but among the forest peoples proper, the reindeer are kept in small herds and are used primarily for transportation instead of serving as a direct source of food.<sup>2</sup> They have served to extend the hunter's range and increase his efficiency, but have not radically altered the economic situation.

Density of human population is a function of the animal population density under these conditions. The forest does not support a heavy population of economically useful animals and the human population is correspondingly sparse. Even now, the Canadian and Siberian taiga regions are among the few great wilderness areas left in the world. In most parts of the zone, seasonal abundance of food and accumulation of great stores of supplies is not characteristic. Small social units spend a large part of each year in isolated camps exploiting a familiar hunting territory, and larger gatherings are necessarily temporary, being largely dependent on local seasonal abundance of fish or game. The limited carrying capacity of the taiga provides a strong stimulus to migration, as a small increase in population soon results in pressure on the old area and new social groups wander into unsettled territories. The operation of these environmental influences has resulted in a thinly settled area of vast extent and essentially uniform cultural characteristics. The uniformity is due not only to the negative aspects of the ecology, but also to widespread diffusion, which has been encouraged by the scarcity of natural barriers and the similarity of natural resources over the whole

<sup>2</sup> Forde, 1934, pp. 364-368.

range. Although local specializations exist, they are overshadowed by the basic uniformity. This is especially clearly demonstrated in the case of Siberia, where linguistic and other evidence shows that a number of migrations of more southern peoples to the boreal zone have taken place; despite this strong exposure to alien cultural traditions, the general boreal pattern has persisted. Through this environmental filter passed all the later Old World influences which reached America through Bering Strait; it has been an effective insulator between the more advanced cultures of the Old and New Worlds.

The homogeneity and vast extent of the circumpolar forest make it a particularly appropriate area for studies of trait distribution and application of the age-area concept. Hatt's well-known work on Arctic clothing was the first of a series of similar investigations by Birket-Smith, Hallowell, Davidson, and others.<sup>3</sup> As a result of his study, Hatt concluded that two clothing complexes of different age existed in the Old World boreal zone, and that these complexes could be traced across Bering Strait and on through Canada. Associated with the younger complex was the snowshoe, an invention of great importance to the boreal peoples because of the winter mobility it made possible. Hallowell's work on bear ceremonialism confirmed Hatt's results and added another group of elements to the snowshoe complex, those associated with the hunting of the bear and the subsequent treatment of its body. Birket-Smith has discussed the whole problem of diffusion and culture levels in the boreal region extensively, pointing out that the older "ice-hunting" level must be considered a primitive and widely distributed basic culture underlying all of the more advanced circumpolar cultures. The snowshoe complex and the specialized Eskimo maritime culture both developed directly from the older base. A detailed study of the snowshoe itself was made by Davidson; he distinguished two types, the plank shoe which developed into the ski, and the frame shoe. The two types are found in both Old and New Worlds, and Davidson suggests that both were developed in Asia, the simple plank shoe being introduced to America with a proto-Algonkian migration and the bearpaw frame shoe arriving later with Athabascan groups. The frame shoe later became an American specialty, while the elaboration of the plank types was confined to the Old World.

In spite of differences in the interpretation of trait distribution, the authors mentioned above are in agreement as to the main trends of development of the forest culture. From the standpoint of this paper the most important point is the demonstration of not only Eurasian-American connec-

<sup>3</sup> Hatt, 1916a, 1934; Birket-Smith, 1929, 1937a, 1938; Hallowell, 1926; Davidson, 1937.

tions, but also of similar trends of development in both hemispheres. This implies long-continued contacts or multiple migrations. The specialized adjustments which have not crossed Bering Strait, such as Siberian reindeer breeding or the elaborate frame snowshoe types of the Canadian Indians, seem to be relatively recent, probably more recent than the development of the intensively maritime Eskimo cultures of the Bering Sea region.<sup>4</sup>

Since the reality of diffusion seems indisputable it remains for archaeological research to attempt to identify the material remains of the various cultures and to demonstrate their relative age in order to corroborate or disprove the inferences based on trait distribution. An additional problem is the establishment of a reasonably accurate absolute chronology for the forest cultures. Such a culture history and chronology would not only form an invaluable background for the study of American prehistory, but would be also an interesting body of data from the point of view of human geography.

Unfortunately, the ecological character of the forest zone has been as discouraging to archaeologists as it has to aboriginal agriculturalists. Most of our information comes from the fringes of the area, particularly in northwestern Europe and northeastern America, with some scattered data from a few other localities. The heart of the area, in Siberia, Alaska, and Canada, is virtually unknown. Consequently any hypotheses based on archaeological sequence must at the outset plead guilty to a lamentable dearth of direct evidence. Perhaps the most important contribution possible under the present circumstances is to outline such information as is available and attempt to assess its significance in the light of the ecological and ethnologically determined cultural characteristics of the area.

The only relatively complete cultural sequence in the entire area is that worked out in northwestern Europe, where a number of studies involving clay varve chronology, the changing relative level of land and sea, and the forest history have provided a remarkably detailed background of geographical and ecological history and an accurate dating of the stages of glacial recession. Recent summaries of the archaeology of the region recognize a succession of cultures which range chronologically from a remote period when arctic or sub-arctic climatic conditions prevailed in northern Germany, to historic times.<sup>5</sup>

<sup>4</sup> Collins (1937, p. 382) points out that certain elements associated with the snowshoe culture first appear on St Lawrence Island in the Punuk stage, not in the older Old Bering Sea. This suggests that the Eskimo may have served as intermediaries between the continents for a few traits.

<sup>5</sup> The discussion of the European sequence is based largely on Clark, 1936 and 1938; Childe, 1931, 1937, and 1939; and Shetelig and Falk, 1937.

The earliest culture of northwestern Europe is that disclosed by excavation of a site at Meiendorf, near Hamburg, by Rust and others.<sup>6</sup> This site was a summer camping place near a small pond in a glacial valley, and the associated fauna indicates a tundra or cold steppe environment, with reindeer, horse, hare, wolverine, grouse, and various waterfowl represented. Pollen analysis confirms the faunal evidence, as pollen spectra characteristic of later periods are absent, while the overlying deposits show the development of the forests of the succeeding Pre-boreal climatic period. The culture had previously been recognized and tentatively placed as Late Paleolithic entirely on the basis of chipped flints from surface sites. The Meiendorf excavations produced a variety of non-lithic artifacts associated with typical shouldered points and blades of flint. Reindeer antler was used extensively for barbed and simple double-ended points and bone was worked into knives and other artifacts. An especially interesting find was an engraved and perforated amber plaque, probably the earliest known example of the use of this material. The Hamburg culture does not appear to have any very specific affinities with more southern areas, but is clearly basically related to the Magdalenian. Its exact dating is also uncertain; its northern location would suggest that it was somewhat later than the French cave sites of the Magdalenian proper. The culture extended from Holland to East Prussia if the surface distribution of the flint types is to be trusted.

During the following Pre-boreal period, dating from 8300 to 6800 B.C. according to Clark, the hardier forest trees invaded the southern Baltic area, although the shrinking remnants of the Fенно-Scandian ice-sheet were still present on the Scandinavian Peninsula and the climate must have been similar to that of the colder parts of the modern forest zone. The Ahrensburg culture of this period, like the Hamburg culture, was first recognized as a result of surface collection of flints, especially a characteristic tanged point.<sup>7</sup> More recently, excavations at Stellmoor, again near Hamburg, have placed the culture in a geologically dateable context and furnished a more complete inventory of artifacts.<sup>8</sup> Here the Ahrensburg level was some three meters above a Hamburg culture horizon and clearly belonged to the latter half of the Pre-boreal. The fauna included such forest types as elk, marten, and beaver, with reindeer, horse, wolf, hare, ptarmigan, waterfowl, and other forms also present. Unusually good conditions of preservation permitted the survival of bone, antler, and even wood. Bone was worked into barbed points of a type previously thought to belong to the later Maglemosean culture, and wooden arrowshafts with notched butts also occurred. The

<sup>6</sup> Summarized in Clark, 1938.

<sup>7</sup> Schwantes, 1928.      <sup>8</sup> Clark, 1938.

most interesting types from Stellmoor, however, are the axes and adzes of reindeer antler. These tools had previously been known through stray finds from Zealand, Jutland, south Norway, and as far east as Silesia. The material itself, and some geological evidence, had led to a Pre-boreal dating, and a somewhat doubtful association at Lyngby, in Jutland, plus general time and space considerations suggested a link with the tanged point cultures. The Stellmoor find confirmed both the dating and the association with flint types.

Other cultures with tanged flint points are known from northern Europe, and are presumably manifestations of the same lithic traditions. One of these occurs on the Arctic and north Atlantic coasts of Norway. This manifestation is called in Finnmark the Komsa and in northwestern Norway the Fosna culture. It is found only on surface sites, which produce the typical tanged points made of flakes and an extensive series of scrapers and blades of various forms. Nonlithic remains are entirely lacking. The Pre-boreal date assigned to these sites is based chiefly on their lithic techniques, and their relation to strandlines; if it is correct, the cultures must have existed under conditions rather like those of modern Greenland, as at this time the central part of the Scandinavian Peninsula was still covered by the dwindling ice-cap.

The succeeding Boreal period (6800-5000 B.C.) witnessed a continued rise in temperature; precipitation was relatively slight. The climate is characterized as "continental." The forest composition of the area changed in response to the rising temperatures; birch and pine continued to dominate in most regions through much of the period, but the oak-mixed-forest (oak, elm and lime) made its appearance and steadily rose in importance. Forest forms constituted most of the fauna with deer, elk, auroch, wild pig, and beaver prominent, and reindeer surviving in many places. Through most of the period, an unbroken forested plain, established in the preceding period, extended from England to southern Scandinavia and the eastern Baltic area. The subsequent marine transgression of much of this lowland is extremely unfortunate, as the Boreal shore settlements are now submerged and it is impossible to recover any adequate data on the marine aspect of the culture of the period.

Sites of the dominant culture of the period, the Maglemosean, are scattered over the still existing remnants of the lowland plain from England to Estonia and possibly Russia. Maglemosean material culture is well known, and clearly indicates a hunting and fishing economy. The only domesticated animal was the dog, which made its first appearance in northern Europe in this period, and evidence of agriculture is completely lacking, despite ex-

cellent conditions of preservation at some sites. Objects of bone and antler are plentiful at Maglemosean sites and form a distinctive class of tools. Antler axes, adzes, and hafting sleeves, both perforated and unperforated, are typical implements and constitute a link with the Pre-boreal Ahrensburg culture. A great variety of barbed bone points and harpoons, including parts of multipronged fish spears or bird darts and bone points slotted for the insertion of flint sideblades, have been very useful to students of the area as diagnostic types. Flint work is abundant, with various scrapers, points with blunted backs, microliths of several forms, and heavier chipped tools which are classified as axes, chisels, and picks. The latter were hafted in antler or wood sleeves. Stone was also worked by pecking and grinding, although not very extensively; a Swedish site produced celts or adzes made by pecking and grinding elongated pebbles, and an imitation of the perforated antler adz in polished stone is also known. Stone mace-heads of several types were also manufactured. Small artifacts of bone, such as simple fish-hooks, perforated phalanges of aurochs, spatulate implements, flat needles, and whistles are quite plentiful. The Danish sites have produced perforated animal teeth from several species, and beaver incisors were split, polished, and beveled, presumably to make cutting tools. Wild boar tusks were used as knives and in a few examples inserted into antler sleeves to serve as adz blades. Small objects of bone were sometimes decorated by incising, pricking, or by various arrangements of shallow drilled pits; the designs thus produced are geometrical with the exception of a few zoomorphic attempts. A particularly significant discovery was that of a sled runner in a peat stratum dated as late Boreal,<sup>9</sup> suggesting that dog driving may have been practiced at this early date. Wooden paddles have been found, and a part of a dugout canoe buried under a deposit of clay in southeastern Scotland apparently dates from Boreal times.

An outstanding feature of the period is the homogeneity of culture prevailing over the entire northern lowland of Europe. Local differences existed—thus the east Baltic area has produced conical bone projectile points, the sled runner mentioned above, and an antler ice-pick, which are unknown in the west<sup>10</sup>—but the general picture is one of scattered and mobile hunting and fishing groups with much the same equipment everywhere. This uniformity was closely linked with geographical conditions; the entire lowland was a woodland, dominated by the cold-tolerating birch and pine, and the restricted marine and lake basins offered no serious barrier to travel from England to the east Baltic.

<sup>9</sup> Childe, 1939, p. 10.

<sup>10</sup> Childe, 1939, p. 9.

Since the Maglemosean is the oldest well known culture in the Boreal forest area a short discussion of its probable antecedents seems pertinent to the general problem of the origin and spread of the northern forest cultures. The recently clarified Hamburg and Ahrensburg-Lyngby cultures have shed new light on the problem, as they provide a link between the Upper Palaeolithic and early forest cultures. The Late Palaeolithic Hamburg culture could have been the source of the barbed bone and antler points and flint working techniques of the Maglemosean; such a detail as the use of amber may be significant, as amber was also used in Boreal times. The Ahrensburg-Lyngby, chronologically intermediate, continued the lithic and bone working tradition and added the prototype of the Maglemosean antler adz. Childe concludes that "the Boreal forest cultures may be derived without remainder through the Lyngby complex from Upper Palaeolithic cultures of East and Central Europe."<sup>11</sup> The hafted axes or adzes of horn and bone, unknown in the Palaeolithic, are considered to be local inventions, made in response to the developing forests. At a somewhat later date, ground stone tools were developed by the application to stone of the grinding and polishing techniques previously confined to bone and horn. Clark has suggested the possibility of a relationship between Maglemosean art and that of the western Palaeolithic<sup>12</sup> and Shetelig believes that there was a basic relationship between the Magdalenian of western Europe and the Maglemosean.<sup>13</sup> An alternative hypothesis has been set forth by Bøe and others.<sup>14</sup> This is the possibility of an eastern, probably Siberian, origin for the Maglemosean complex. Bøe points out that the bone dagger or point with incisions for flint sideblades occurs in what has been considered a palaeolithic context at Afontava Gora, near Irkutsk. The chief difficulty involved in a theory of eastern origin is the lack of sites to fill the serious space and time gaps. This absence of positive evidence is not conclusive, since most of the area has hardly been explored, and the whole question is consequently obscured. In any case, the development is considered to be largely self-contained, an adaptation to changed ecological conditions by cultural descendants of the northern Palaeolithic peoples.

Cultural developments during the succeeding Atlantic period (5000-2500 B.C.) are of special interest. Trends in forest development which had already started in Boreal times continued; the vegetation of the central regions changed from the older coniferous forest to one dominated by oak and associated species in response to a more ample rainfall, while the peripheral areas (northern Scandinavia, Finland, and northern Russia) retained

<sup>11</sup> Childe, 1939, p. 11.

<sup>12</sup> 1936, pp. 178-180, 189.

<sup>13</sup> 1937, pp. 27, 29.

<sup>14</sup> Bøe, 1939.

their boreal character, as they still do. In the central region, especially in Denmark and Baltic Germany, the Maglemosean was transformed into the shell-midden building Ertebølle culture. This culture is clearly related to the older tradition, and might well be considered even closer if Maglemosean shore settlements were available for comparison. In the interior of Jutland, the Gudena culture also continued the boreal tradition through most of the Atlantic period.<sup>15</sup> Toward the end of the period, Neolithic influences appeared,<sup>16</sup> and the hunting peoples were ultimately overwhelmed by the Neolithic agriculturalists. In parts of the Scandinavian Peninsula, Finland, and the Russian northern forest area, however, cultures continued to develop along Maglemosean lines, not only during the Atlantic period but in later times as well. These later developments in the ecologically and culturally conservative northern area seem to be related to general trends in the entire boreal area, while the truly Neolithic cultures which occupied the southern part of the Maglemosean range completely diverge from the sequence with which this paper is concerned.

The characteristic archaeological manifestations of the coniferous area during this period are the sites known as "dwelling places." A particular feature of these Atlantic period sites is the extensive use of volcanic rock for various types of adzes and other tools; this material was worked by rough flaking, pecking and grinding. Slate was used for broad and flat spearpoints in the northwestern part of Norway and harpoons or points of bone and horn were still used, as in Maglemosean times. Even the bone point with flint sideblades continued. These dwelling places are found in Sweden around the large central lakes and on the west coast, but the Baltic coast seems to have been more thinly settled. Oslofjord and the southern and western coasts of Norway also have sites of this type, and even the "flint places" (descended from the Komsa and Fosna cultures) have axes of trap together with the definitive flints.<sup>17</sup> In the Eastern Baltic in Finland, particularly between Abo and Helsinki, are the dwelling places of the Suomosjärvi culture. Here occurs a roughly flaked axe which is usually ground on the cutting edge, small flake chisels, completely polished gouges, and slate points with broad blade and lenticular cross section.<sup>18</sup> According to Shetelig, this culture has closer analogies to the east in Russia than it has in Scandi-

<sup>15</sup> Brønsted, 1938, p. 124.

<sup>16</sup> The older dating of Ertebølle pottery as Early Atlantic has been seriously questioned since the recognition of at least two marine transgressions in the area. See Rydbeck, 1930; Brønsted, 1938; and Childe, 1939, p. 12.

<sup>17</sup> This description is based largely on Shetelig and Falk, 1937, p. 42 ff.

<sup>18</sup> Europaeus, 1929; 1930, p. 170

navia.<sup>19</sup> An important trait which may have reached the area before the end of Atlantic times is the ski, specimens of which have been found in subboreal peats in Finland and in early post-Atlantic deposits of Sweden.<sup>20</sup>

The still later phases of the northern hunting area are called in Scandinavia the Arctic culture, a name first proposed by Montelius and Rygh in 1874.<sup>21</sup> The Arctic culture proper flourished in post-Atlantic times and was largely contemporaneous with the Scandinavian megalithic culture, although some sites show Arctic types mixed with Bronze Age tools, and even the Lapp Iron Age sites (of early historic age) preserve much of the Arctic complex.<sup>22</sup> The culture is best known from dwelling places on the Scandinavian Peninsula, especially on the North Sea coast and the Baltic outside of the megalithic area, and from Finland. In Finland, the late Stone Age sites are associated with beach lines about 40 meters above the present sea level, while the Bronze Age settlements occur below these raised beaches. The most distinctive artifacts of the Arctic cultures are ground slate points and knives.<sup>23</sup> Slate was also used for other artifacts, such as fish-hooks and combs. The adzes or axes so prominent in the preceding period continued, with polishing much more commonly practiced, although flaked types were by no means abandoned. A number of new types of heavy tools were developed, including the Russo-Carelian chisel, a polished tool nearly triangular in cross section, and the "shoelast" celt. Gouges of various forms are also common in Arctic culture sites. Nearly all of these heavy tools show evidence of having been hafted adz fashion, rather than as axes, a prevalent pattern in the boreal zone. Stone was also used for grooved line or net sinkers, pendants, and perforated maces much like those of the Maglemosean. Flint and pyrite fire-making sets are known, having been borrowed from the megalithic cultures according to Shetelig. Quartzite and some flint were used for flaked points, knives, and scrapers, and in north Russia a few effigy figures of chipped flint have been discovered.<sup>24</sup> Bone tools are fairly plentiful and are obviously related to the bone work of the earlier forest cultures. The barbed points of bone or antler, including the slotted type with stone sideblades, closely resemble those of the Maglemosean. Childe is inclined to regard many of the heavy stone tools as descendants of the earlier bone types and the slate knives and points are also paralleled by bone types.<sup>25</sup>

<sup>19</sup> Shetelig, 1937, p. 45.      <sup>20</sup> Childe, 1937, p. 241.

<sup>21</sup> Montelius, 1876; Rygh, 1875.

<sup>22</sup> Shetelig and Falk, 1937, pp. 86 and 87

<sup>23</sup> The most complete classification of Arctic slate tools is that of Brøgger, 1909.

<sup>24</sup> Tallgren, 1936, p. 162.

<sup>25</sup> Childe, 1931, p. 343 ff; 1937, p. 240.

Remains of wooden skis dating from this period have already been mentioned, and sleds were certainly present. Most of the sites are refuse heaps, but at Aloppe, a Swedish site, traces of houses were found. These were circular floors from three to four meters in diameter with remains of floor coverings of sand or needles of conifers still visible. Traces of fireplaces were also present. The description suggests some sort of bark- or skin-covered structure of the same general type as the widespread Siberian tent. Burials are very rare; those found have been simple, single inhumations in refuse heaps, in a few instances with modest grave goods. Red ocher in association with burials has also been reported.

The presence of pottery nearly everywhere is particularly useful in detecting relationships with more advanced areas and in tracing cultural contact within the Arctic culture. In Sweden, the pots were inspired by the hand-made types of the megalithic culture,<sup>26</sup> but in Finland and north Russia the well known "Kammkeramik" became the prevailing type. Europaeus has distinguished three main types of east Baltic pottery, each with subdivisions, the main types being associated with separate stages in the recession of the Litorina Sea. The earliest styles show impressions of cords forming a "maggot" pattern and also some incising. The next period is marked by a preponderance of comb-stamping with the most common style an arrangement of the stamping into horizontal zones. The last phase is a degenerate one, with pits, formerly an auxiliary decorative device, alone as decorative features. The pottery is coarsely grit-tempered and the vessels were simple pots with rounded or pointed bottoms. The coiling method of manufacture was used.<sup>27</sup>

Another distinctive feature of the Arctic complex is the art, especially the rock engravings.<sup>28</sup> These were pecked or ground into flat rock surfaces and show naturalistic animals in outline or groups of smaller conventionalized figures of animals and men. The second type appears to be later. Small objects had animal heads, usually elk or bear, carved upon them and figurines of elk in clay were found at Aloppe. The finest specimens of this type of art are the battle-axes of stone with a carved head on the butt; the weapons themselves are the result of external influence, but the carving is typically Arctic. The same tradition was even transferred to metal at a later date, as shown by the Seima hoard in Russia.<sup>29</sup>

<sup>26</sup> Shetelig and Falk, 1937, p. 80.

<sup>27</sup> Europaeus, 1930.

<sup>28</sup> The discussion of Arctic art is based on Clark, 1936, pp. 180-189; Clark, 1937; Shetelig and Falk, 1937, pp. 99-121.

<sup>29</sup> Childe, 1939, p. 210.

The Arctic culture can be characterized as a belated survival of the cultural pattern established in the northern forests during the Boreal period. Despite numerous evidences of contact with the more advanced cultures to the south, the hunting and fishing economy persisted, presumably for ecological reasons. The population, as in earlier times was scattered thinly over the area, but maintained widespread contacts with the aid of water craft, skis, and probably dog sleds, as shown by the wide distribution of many artifact types and special products, such as the green slate of Olonetz. A sled runner from Finland, actually of Atlantic age, was made of a Siberian species of pine.<sup>30</sup> The persistence of the pattern is extremely important, as it makes it possible to connect it with the historic culture of the Finno-Ugrians.

In Europe to the east of the Baltic area the sequence of cultures in the forest zone is not so well established nor so adequately dated. Joukov<sup>31</sup> has made a comparative study of flint types from the Russian forest zone and those of the Maglemosean sites and concluded that a close relationship exists. Numerous finds of Maglemosean bone types in Russia have been reported, but, as Childe has repeatedly pointed out, these artifacts are usually associated with material which would make their dating post-Boreal, in some cases as late as the Bronze Age.<sup>32</sup> Consequently the time, and even the direction, of the transmission of Maglemosean traits to north Russia is still unsettled. Whether or not a true Maglemosean culture was present in the Boreal period it is certain that cultures allied to those of Finland and Scandinavia in the Atlantic and later periods were established in Russia as far as the Urals. A number of sites which might generally be described as Arctic Neolithic have been discovered.<sup>33</sup> Excavations on Lake Latcha, Lake Onega, and in the White Sea region have produced polished gouges, bone and horn spoons, chisels and adzes and other types clearly related to the Finnish and Scandinavian specimens. Comb-stamped pottery from northwestern Russia can be correlated with the Finnish sequence. One of the most interesting sites in northwest Russia is that of Olenii Ostrov, an island in Lake Onega.<sup>34</sup> Here, more than a hundred burials have been excavated. Most were shallow and contained quantities of red ocher. Grave goods included tools of flint, slate or schist, bone and horn, and worked animal teeth. There were also effigies of humans and carved elk heads. Other ochered burials, associated with pit and comb pottery, have been excavated on the banks of the Eloma River,<sup>35</sup> and pit and comb pottery and other

<sup>30</sup> Childe, 1937, p. 238.

<sup>31</sup> Joukov, 1939.

<sup>32</sup> Childe, 1937, pp. 239-241.

<sup>33</sup> Tallgren, 1936; Raudonikas, 1936; Field and Prostov, 1938, 1940.

<sup>34</sup> Field and Prostov, 1938, p. 667; 1940, pp. 224-225.

<sup>35</sup> Field and Prostov, 1940, pp. 225-226.

northern types of artifacts occur in the central Russian forest zone.<sup>36</sup> Associated pottery indicates that these sites are either very late Neolithic or Bronze Age in date, but the animal headed spoons, bone points with flint sideblades, polished stone axes or adzes, and other types have close affinities with the Arctic culture and earlier levels to the west. Dwelling places on the dunes of the Ob show pit and comb-stamped pottery and some stone work of Arctic type mixed with metal age wares. A general study of surface finds from western Siberia by Ailio<sup>37</sup> led to the conclusion that they equated culturally with the Scandinavian Neolithic.

Central Siberia, in particular the upper Yenissei and Baikal regions, has been the object of considerable attention. On Lake Baikal the famous stratified site of Ulan-Chada is the outstanding archaeological feature.<sup>38</sup> Here eleven cultural layers deposited in an accumulating sand dune offer some evidence of sequence in the area. The lowest stratum contained no pottery or polished stone with the exception of some slate artifacts. Comb-stamped pottery appeared immediately above this level, to be followed later by polished adzes and gouges, chipped arrowpoints, and other types of pottery. Many articles of nephrite appeared in the upper layer. Bone was entirely lacking, due to poor conditions of preservation, but bone implements were associated with the same stone types in other sites of the region. A composite picture of the culture represented by the upper layer at Ulan-Chada and other sites shows various types of axes, adzes, and gouges<sup>39</sup> of both flattened and angular cross section, pestles, notched or perforated netsinkers, and polished ring-shaped stone club heads and other stone rings. Flat stone pendants and effigy fish and cylindrical stone beads were used as ornaments. Chipped points, scrapers, and knives were the most plentiful forms in chipped stone; both stemmed and triangular points were noted. Chipped effigy flints, similar to those from north Russia, were also found. Grave finds have added to this complex grooved arrowshaft polishers, bone and antler barbed points, so-called "daggers" of bone with flint sideblades, eyed needles and tubular bone needle cases, and animal tooth necklaces. A later find of a figurine with costume represented shows that the neolithic people had a style of dress similar to that of the modern Arctic population.<sup>40</sup> Polished slate and nephrite knives and a large number of small pendants of slate or soapstone are characteristic grave finds. Pottery also occurs, and, in a few cases, copper knives. Petri has found stone rings which he interprets as

<sup>36</sup> Bahder, 1929.

<sup>37</sup> Cited in von Merhart, 1928, p. 68.

<sup>38</sup> Petri, 1916; von Merhart, 1928; Jochelson, 1928; Clark, 1940.

<sup>39</sup> The gouges appear to be of a different type from those of Scandinavia.

<sup>40</sup> Field and Prostov, 1938, p. 676.

evidence for the use of the bark-covered tent as a summer dwelling and the pit-house is suggested as a winter house type.<sup>41</sup> Apparently there is no evidence of agriculture or reindeer breeding.

In the Krasnoyarsk region on the upper Yenissei a somewhat different neolithic complex has been reported. Comb-stamped vessels with pointed or rounded bottoms seem to be the basic ceramic type, although other types are also present, including some which resemble Lake Baikal pottery. The stone tools consist of adzes, gouges, scrapers, blades, points, and other forms. In some cases, mixtures of neolithic and Bronze Age types occur.

Von Merhart<sup>42</sup> suggests that this situation may be interpreted as evidence of two cultures of neolithic type, the oldest and most widely distributed being that with comb-stamped pottery. This culture appears in purest form on the upper Yenissei, but is also present in the lower layers of Ulan-Chada. The second centers in the Baikal-Angara region and was apparently developed on the older base; it added new types of pottery, stone choppers or axes of special form, stone pestles, fish effigies, cylindrical pendants, and polished nephrite. The older layer is related to the late neolithic cultures of Finland and north Russia. Specific parallels cited by von Merhart, other than the pottery, are the Russo-Carelian adz, found on both sides of the Urals, in the Tobolsk Government, and on the Yenissei, arched-backed gouges with similar distribution, and slate fish-hooks. The affinities of the later culture, except for the general Arctic base, are not so plain, but there are some connections with the metal-using cultures to the west. The Seima metal hoard of Russia, for example, produced a nephrite ring.

Archaeological information from eastern Siberia is still more fragmentary, with Jochelson's work in Kamchatka the only easily available presentation of archaeological material obtained by modern methods of excavation.<sup>43</sup> The Kamchatka sites, which were pithouse villages, produced a familiar series of artifacts, with completely or partially polished celts and adzes, pestles, netsinkers, and chipped stone types. Several types of stone lamps also occurred. Obsidian was chipped into effigy objects resembling those of central Siberia and northern Europe. The bone implements, which were numerous at some sites, frequently resemble Eskimo specimens. Two types of pottery were reported; the first, a coarse ware related to the ceramics of the Kuriles and Hokkaido, the second, a harder and finer ware with cord marking as a surface treatment and punctate and other decorations. This type was confined to northern Kamchatka. From Sakhalin come reports of

<sup>41</sup> Jochelson, 1928, p. 31.      <sup>42</sup> 1928, p. 65 ff.

<sup>43</sup> Jochelson, 1928. Discussion of other areas in eastern Siberia is based on the useful summary of Davis (Davis, 1940).

pit dwellings, stone axes, chisels, and chipped flint knives, points, and scrapers. Pottery has also been found there, as have pestles and grooved or perforated netsinkers. In the Amur and Ussuri drainages, pottery, stone adzes, grooved and concave chisels, celts, and, on some sites, polished slate knives, arrow points, and spear points, and daggers resembling bronze types have been found. A few bone tools are also reported. The Amur pottery falls into several types and seems to have been derived from the south. Links with the Angara-Baikal region are suggested by the polished stone tools, especially the concave chisels and celts or adzes with concave cross section.<sup>44</sup> The Amur sites are chiefly pithouse villages, with a few shell heaps also, but in the south Ussuri country only a few shell heaps are reported. In the latter region one investigator reported a complex similar to that of northern Russia.<sup>45</sup> A few other sites scattered over a large area in eastern Siberia have yielded material of neolithic character, including cord- or mat-marked pottery, bone harpoons and possibly a bone spoon, and chipped or polished stone tools. Stone adzes are present as far as the Chukchee territory. In addition to these sites, there are remains of villages on the Arctic and Pacific coasts which are presumably to be attributed to the Eskimo and Maritime Chukchee.

An evaluation of the scanty material from Siberia is difficult. The general picture appears to be one of a scattered population living in pit dwellings and having a hunting and fishing economy, with a possibility of agriculture at the southern sites. Everywhere, partially or completely polished stone adzes or celts were made, and grooved or notched netsinkers are also widely distributed. Stone chipping was expert, as shown by knives, points, and scrapers. Bone artifacts are rather rare, but their abundance at some sites indicates that this is a matter of preservation rather than original scarcity; awls, arrowpoints, barbed points, and other forms have been found. Grit-tempered pottery of simple form and decoration is widespread. The available evidence fits well with cultural reconstruction suggested by Zolotarev;<sup>46</sup> this author describes a widespread basic complex dependent on ice-fishing for winter livelihood and using the pit house, pottery, and dog traction. Von Merhart,<sup>47</sup> impressed by the general character of the polished tools and other artifacts, states that a perceptible relationship with the Finnish and north Russian younger Neolithic can be demonstrated in eastern Siberia. It is also apparent in the case of the Kamchatka sites that the culture was strongly influenced by the specialized maritime culture of the north Pacific. Accurate dating of the finds is not possible, but the Amur River sites were in-

<sup>44</sup> Von Merhart, 1928, p. 68.

<sup>45</sup> Davis, 1940, p. 31, summarizing Jelissejov.

<sup>46</sup> 1938.

<sup>47</sup> 1928, p. 70.

fluenced by metal-using cultures and ethnological data indicate that cultures essentially neolithic in character have existed until modern times. Even in central Siberia the oldest pottery styles equate with the relatively late comb-stamped vessels of the east Baltic. The comparatively complete European sequence and the apparently late date of the Siberian manifestations suggest that the flow of culture traits was primarily eastward, but a definite assessment of the significance of the data must await further work on the gap between the Siberian Palaeolithic and the cultures discussed.

In the American forest zone, research has also been concentrated on the margins, in this case northeastern United States and eastern Canada. The geographically important Yukon and some of its tributaries have been investigated by Rainey and de Laguna,<sup>48</sup> but only one site was located which differed significantly from the culture of the historic Athabascan and Eskimo inhabitants.<sup>49</sup> This site produced a flint and obsidian industry which is lacking in the historic complex, and a rather extensive native copper industry. Ground stone was represented by a fragment of an adz blade and whetstones. Bone and horn objects were relatively plentiful and resembled modern types, but the blunt bird arrow and a barbed point with stone side-blades, used until quite recently in the area, were absent. In addition to this site, sporadic finds of artifacts under conditions suggesting considerable antiquity have been made in interior Alaska as a result of hydraulic mining activities,<sup>50</sup> and polyhedral cores and endscrapers from a flint working station at College have been compared with similar specimens from Mongolia by Nelson.<sup>51</sup>

In the western Great Lakes area, especially in Minnesota and Wisconsin, the earlier cultures are chiefly of Woodland type and are classified in the Lake Michigan Phase of the Woodland Pattern.<sup>52</sup> This culture preceded the Upper Mississippi manifestations of the area and may have been the earliest in the region, with the possible exception of certain finds attributed to Early Man.<sup>53</sup> Another complex, associated particularly with Wisconsin, is represented by numerous surface finds of copper implements of types not linked to any definite cultural manifestation by excavation. Among the types collected are spears, both tanged and socketed, arrow points, knives of several forms, harpoons, awls, gouges, axes and adzes, and other forms. The projectile points often have a medial ridge and are sometimes ornamented with indented lines in zig-zag or other patterns. The relative age of these specimens is necessarily inferential, but their absence in Lake Michi-

<sup>48</sup> Rainey, 1939; de Laguna, 1936, 1939.

<sup>49</sup> Rainey, 1939, pp. 364-371.

<sup>50</sup> *Ibid.*, pp. 381-389.

<sup>51</sup> Nelson, 1937.

<sup>52</sup> McKern, 1931a; Wilford, 1941.

<sup>53</sup> McKern, 1937, pp. 139-140.

gan Phase sites suggests a relatively early date; this is substantiated by the deep corrosion usually present on the implements.<sup>54</sup>

In New York, a more clearly delimited cultural sequence has been established. Here sites of a preceramic and probably preagricultural population, the Lamoka Focus of the Archaic Pattern in Ritchie's terminology, represent the earliest horizon yet discovered.<sup>55</sup> The Lamoka components show abundant chipped stone work, with long, narrow-bladed, stemmed points especially characteristic, a rich bone and antler industry, and both flaked and polished heavy stone tools, of which the beveled adz and the rough sandstone chopper are considered to be distinctive types. Stone was also pecked and ground into cylindrical pestles, rectangular or triangular celts, and plano-convex adzes, and shallow mortars and mullers were used in the preparation of vegetable foods.

Succeeding the Lamoka complex and apparently in part coexistent with it is the Laurentian Aspect, also classified in the Archaic Pattern by Ritchie.<sup>56</sup> The outstanding traits of the Laurentian are native copper implements, ground slate knives and points, stone gouges, plummets, and bannerstones. Bone and antler are rare on the New York sites, and were completely lacking at a related site near Vergennes, Vermont.<sup>57</sup> Two components at Brewerton, New York, produced a number of nondescript awls, spatulate tools, flat needles, conical antler points, flat bone points, unilaterally barbed harpoons of two forms, and other types, some of which resembled Lamoka specimens closely.<sup>58</sup> At another site, on Frontenac Island in Lake Cayuga, where Laurentian and Lamoka types were mixed in an extensive cemetery, ornaments of marine shell, an effigy antler comb, a bone gouge, several harpoon types, three types of bone flutes or whistles, and perforated elk and bear teeth occurred.<sup>59</sup> Pottery obtained at Brewerton came largely from the upper levels of the deposits and consisted of two types. The first was coarsely grit-tempered and all sherds were marked with either cord-wrapped paddle or fabric impressions. The only essentially decorative feature noted was a circular stamp arranged in three rows. The vessels were straight-sided with vertical rims. The second type was more carefully made; tempering particles (also grit) were finer, and the paste was better mixed and fired. The shape was again predominantly straight-sided or slightly globular, but the rims were slightly everted. Decoration probably covered the entire vessel, cord-wrapped stick impressions, dentate stamping, rocker stamping, and trailed

<sup>54</sup> Moorehead, 1910, pp. 161-234.      <sup>55</sup> Ritchie, 1938b, Ms.

<sup>56</sup> Ms. This aspect was formerly included in the Woodland Pattern by Ritchie.

<sup>57</sup> Bailey, 1939, pp. 7-9. A few bone implements were found in an intrusive pit of historic age at this site.      <sup>58</sup> Ritchie, 1940b.      <sup>59</sup> Ritchie, Ms.

combing being the important decorative techniques. Sherds from steatite vessels also occur on the Laurentian sites.

In New England an apparently related complex, the "Red Paint Culture," is known, chiefly through the work of Willoughby and Moorehead.<sup>60</sup> The Red Paint Culture is primarily a mortuary complex characterized by heavy deposits of red ocher and groups of stone tools and other artifacts in pits from two to four feet deep. It has been assumed that the pits represent graves from which the skeletal remains have disappeared through decay or cremation. The individual graves are grouped in cemeteries, of which nearly thirty have been discovered; these cemeteries are located near the south central coast of Maine, with a few examples farther inland. Moorehead classifies the stone implements found in the Red Paint graves into the following seven groups: gouges, of several types; plummets, including effigy forms; ornaments, consisting of long stone pendants and small perforated stones; bipennate bannerstones with short wings, and stone crescents; slate points or daggers of long hexagonal and small flat forms; chipped objects, including spear and arrow points and knives; and adzes of a variety of forms.<sup>60a</sup> In addition to these artifacts, a number of unworked stones or minerals have been found, of which the red ocher and iron pyrites are especially characteristic. More recently excavations in shell heaps in the Frenchman's Bay region of Maine have shed new light on the culture. At the Nevin Site, at Bluehill, Maine, Red Paint graves and artifacts were found in association with pottery of Woodland type.<sup>61</sup> The Waterside shell heap at Sorrento revealed two occupation levels divided by an old surface of humus and pebbles; the upper level contained pottery and a few other artifacts, but the lower level lacked pottery and produced a number of Red Paint artifacts, such as plummets, gouges, adzes, and slate points.<sup>62</sup> The Taft's Point shell heap,<sup>63</sup> a few miles to the east of the Waterside site, produced a similar assemblage in its lower levels, and also contained a flexed burial which was covered with red ocher. Here, also, pottery was confined to the upper level.

Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland, and Labrador have not been intensively explored, but the available information indicates that a complex related to the Laurentian and Red Paint is present. Wintemberg<sup>64</sup> reports that ground slate points have been collected on sites yielding pottery of Algonkian type, and that the bayonet slate point has

<sup>60</sup> Willoughby, 1898, 1935; Moorehead, 1916, 1922b.

<sup>60a</sup> Moorehead, 1922b, p. 103. The description of Red Paint cemeteries is taken from Moorehead, 1922b, and Willoughby, 1935.

<sup>61</sup> Johnson, 1937, p. 163.

<sup>62</sup> Rowe, 1940.

<sup>63</sup> Hadlock, 1939.

<sup>64</sup> Wintemberg, 1931.

been found in three separate localities in Ontario and one in Quebec. Semi-lunar knives (associated with the New York Laurentian, and probably [but not so far discovered] with the Red Paint Culture of Maine) have occurred on a few Algonkian sites in Ontario. Gouges are also present and are more common in the southern and eastern portions of the province. Plummets are rare in Quebec and Ontario, but appear to be more numerous in New Brunswick, Newfoundland, and possibly Labrador. A collection made by Speck<sup>65</sup> at Tadoussac included large chipped blades, scrapers, chisels or gouges, pestles, long slate points with round or quadrangular cross sections, and a few broken artifacts which may have been plummets. Johnson<sup>66</sup> reports, as a result of personal examination of specimens in the National Museum of Canada, that elements of a Laurentian-like complex are present both to the east and west of Tadoussac. Labrador is known chiefly through the work of Strong,<sup>67</sup> who obtained specimens from three sites in the northeastern section. Chipped points and scrapers, fragmentary knives of ground sandstone and slate, ground slate points, celts, an adz, and a gouge are among the types noted. Lloyd, Howley, and Wintemberg<sup>68</sup> have published material on Newfoundland and describe gouges, ground slates, plummets, and other artifacts of Laurentian type, as well as material from late Beothuk graves and artifacts of Dorset Eskimo type. Wintemberg concludes that the question of whether or not the slate points, plummets, and other Laurentian types are to be identified with Beothuk culture is still unsettled.<sup>69</sup> New Brunswick and Nova Scotia<sup>70</sup> have produced many surface finds of slate points, gouges, plummets and other familiar artifacts, and an excavation in Nova Scotia uncovered a deposit of tools much like those of the Red Paint graves.<sup>71</sup>

It should also be noted that Laurentian types occur, both as surface finds and *in situ*, in areas to the south and east of those mentioned. These manifestations are sporadic and presumably peripheral.<sup>72</sup> The New York Coastal aspect shows a number of Laurentian traits in its earlier components, especially in the distinctive Orient Focus. Here, however, there are other traits which are definitely not Laurentian, such as the grooved axe.<sup>73</sup>

In summary, the Laurentian and related manifestations appear to be a relatively old and widespread complex in the Northeast. Stratigraphic and other evidence in New York places the complex between the Archaic

<sup>65</sup> Speck, 1916.

<sup>66</sup> Johnson, 1937, pp. 163-164.

<sup>67</sup> Strong, 1930.

<sup>68</sup> Lloyd, 1875; Howley, 1915; Wintemberg, 1939-1940.

<sup>69</sup> *Op. cit.*, p. 330.

<sup>70</sup> Smith, 1929 and Strong, 1930 offer convenient summaries of the scattered literature on this area.

<sup>71</sup> Piers, 1895, p. 34.

<sup>72</sup> Ritchie, 1940b, pp. 96-97.

<sup>73</sup> Ritchie, Ms.

Lamoka Focus and the Vine Valley Aspect, with contact in the east with early components of the Coastal Aspect.<sup>74</sup> In New England the evidence of the Taft's Point and Waterside sites indicates that the complex was present in the Frenchman's Bay region before components of the culture known from the ordinary coastal shell heaps had become established there, but the Nevin site shows that the two cultures overlapped. In the interior of Maine, the reported presence of three intrusive graves, whose contents suggest the Vine Valley Aspect,<sup>75</sup> in a Red Paint cemetery suggest an antiquity comparable to that of New York. A Red Paint cemetery at Old Town, Maine is said to have produced historic material, but the conditions of excavation here were such as to make the evidence of doubtful value.<sup>76</sup> The Wisconsin coppers have not been found in situations permitting relative dating, and the same is true of Canadian finds. Johnson has concluded that the complex "extends over a varying chronological scale," and that its geographical distribution, straddling the boundary of successful agriculture, must be taken into consideration in assessing the significance of the presence or absence of pottery.<sup>77</sup>

An important aspect of the Laurentian problem is that of external contacts. The presence of ground slate points and semilunar knives has suggested Eskimo influence to many students of the Northeast and a closer analysis reveals a number of other traits shared with the Eskimo.<sup>78</sup> An alternative explanation, advanced by Strong to explain the Eskimo-like features, is that the northeastern culture may be a representative of a stage in boreal development ancestral to Eskimo and Indian cultures.<sup>79</sup> The subsequent discovery of sites of the Eskimoan Dorset Culture in Newfoundland has modified the situation as discussed by Strong, as here the geographical ranges of the two groups overlapped.<sup>80</sup> If detailed studies are able to demonstrate that contact actually occurred in this region between Dorset Eskimo and representatives of the Laurentian culture, a new approach to chronological problems in the Northeast will be opened. The problem is not a simple one involving a single contact of brief duration; if Collins' suggestion that the parallels between the Dorset and northeastern cultures are sufficiently strong to indicate a long contact period is correct,<sup>81</sup> a clear and comprehensive explanation does not seem possible with the facts now at hand. The New York and New England sites also show influences from other areas; thus the bannerstone of this area was probably derived from the southeast, where it is an ancient and widely distributed trait.<sup>82</sup> In New York, such traits as the beveled adz, rough chopper, and antler pendants

<sup>74</sup> *Ibid.*

<sup>75</sup> Moorehead, 1922b, pp. 46-49.

<sup>76</sup> Hadlock, 1941a.

<sup>77</sup> Johnson, 1937, p. 165.

<sup>78</sup> de Laguna, 1940.

<sup>79</sup> Strong, 1930.

<sup>80</sup> Wintemberg, 1939-40.

<sup>81</sup> Collins, 1940, p. 570.

<sup>82</sup> Ritchie, 1940b, p. 97.

suggest intimate contact with the Lamoka culture. The pottery found in the upper levels of the Brewerton site, at Vergennes, and in the Nevin shell heap may have been derived from the southeast by way of the coast, or possibly from early Lake Michigan cultures to the west.

The subsequent history of the Laurentian area is apparently one of more or less continuous modification from outside sources. In New York, the arrival of the Vine Valley Aspect, the Owasco Woodland, and finally the Iroquois culture, submerged the older manifestation in the inland area, while the Coastal Aspect probably accomplished the same result around New York City. The same general picture applies in southern Ontario and Quebec, and in New England, with the Coastal Aspect perhaps playing an important role in the latter area. These later complexes become progressively less important to the north and east, probably for ecological reasons, and different traditions appear. In Newfoundland the Dorset Eskimo culture is involved, but its chronological relationship with the Laurentian is not clear. In Labrador there seems to have been a hiatus between the Laurentian-like Old Stone culture described by Strong and the Montagnais-Naskapi and Eskimo cultures of the historic period.<sup>83</sup> It is quite possible that in isolated areas of Maine and the Maritime Provinces a Laurentian culture survived to a late date because of the unattractiveness of the region to aboriginal agriculturalists; the same factor would operate with even greater force in Newfoundland, where the culture may have been maintained until the historic period by the Beothuk. The suspected Laurentian horizon of the western Great Lakes would perhaps have contributed to the formation of the early Lake Michigan Woodland culture.

This archaeological sequence presents suggestive parallels with the reconstruction of Northeastern culture outlined by Speck.<sup>84</sup> This author has characterized the historic culture of the Abenaki group of Maine and the Maritime Provinces as being fundamentally of an archaic, subarctic type, long maintained in the area in spite of numerous influences from the south and west, while the modern culture of the Montagnais and Naskapi of the Labrador Peninsula is a part of a more recent level of boreal culture. This reconstruction points to the prehistoric Abenaki as the authors of the Laurentian culture in their historic range, and possibly over a much wider area. Both Speck and Jenness<sup>85</sup> agree in deriving the Algonkians from a western homeland, probably in central Canada, where contact with the Eskimo occurred, and it is tempting to suggest that the Eskimo influence so apparent in Laurentian culture was exerted in the west, rather than in Labrador and Newfoundland. Such a situation is more compatible with the long period of mutual influence postulated by Collins than is a probably

<sup>83</sup> Strong, 1930, pp. 140-142.

<sup>84</sup> Speck, 1926.

<sup>85</sup> Jenness, 1940, pp. 3 ff.

late contact between Dorset and Laurentian outliers in Newfoundland or Labrador. It must be admitted, however, that no direct evidence of the presence of a Laurentian culture in the supposed homeland has been discovered.

Whether the Laurentian-Dorset interchange took place in central Canada or in the eastern Arctic, the Laurentian appears to be closely connected with an old, and probably basic level of boreal Algonkian culture because of its relatively early chronological position and its prominence in the archaic Algonkian area. This should mean that it is more closely related to Old World boreal levels than the later phases of Algonkian culture, with their affinities with the south, or, in the case of Labrador, with the recent Eskimo. A comparison with the European sequence at once shows almost startling parallels in heavy stone tools and slate objects between the Laurentian, especially the Red Paint variant, and the later phases of the Maglemosean-Arctic Culture sequence.<sup>86</sup> Closer analysis indicates that the extremely detailed parallels are misleading. For example, there is no adequate explanation for the absence of such prominent types as the knobbed and grooved adzes and gouges of New England in northern Europe if a really close relationship between the two areas existed. Similarly, the naturalistic rock engravings of the Old World culture do not have any stylistic counterpart in northeastern America. The bayonet slate points of New England may have a local prototype in the swordfish sword, to judge by the Taft's Point and Waterside sites, and slate work in general is supposed to be due to Eskimo influence. For these reasons, any facile identification of the two cultures is unjustified, even if the great geographical gap is ignored. There is however, a basic core of elements whose similarity indicates some connection, even if the more impressive parallels are discounted. Many of these were present in Europe in the preceding Maglemosean culture and a few are of Palaeolithic antiquity; their occurrence in America would not necessarily indicate more than that both cultures shared in an ancient common tradition, but the strong development of heavy stone tools in the late Atlantic Period and Arctic cultures of northern Europe suggests that this level in particular is a representative of a boreal complex which strongly influenced the Laurentian. The highly developed slate industry of the same area further suggests that the Laurentian slates may not be solely the result of Eskimo influence, although specific forms may be derived from this source. The pottery of the later European and Siberian forest zone may also have been borrowed, as its resemblance to

<sup>86</sup> Holmes, in commenting on the parallels between New England and northern Europe, suggested that the relatively small Atlantic gap might be of significance. (Holmes, 1919, pp. 22 ff.)

Laurentian and Lake Michigan ceramics is marked.<sup>87</sup>

The chronological implications of a connection between the Laurentian and the European cultures are of great interest. In late Atlantic times, somewhere in the neighborhood of 3000 B.C., ground adzes, gouges, and slate points were being manufactured in Finland. Pottery was added to the complex at a much later date. The Siberian finds, which are of more immediate importance, seem to be chiefly related to the ceramic stages of the European sequence, and are apparently somewhat later than their European equivalents. At the present time, no culture is known from Siberia which shows the high degree of similarity with the European finds demanded by the suggested derivation of the basic Laurentian from the Old World. The presence of such a culture in the third or second millennium B.C. in Siberia would fulfill the conditions postulated by Jenness for an ancestral inland Eskimo culture,<sup>88</sup> and provide the link between mesolithic and Eskimo culture suggested by Collins,<sup>89</sup> in addition to furnishing a plausible Old World source for the Laurentian culture. Such a dating has the merit of providing a reasonable span for the transfer of the Laurentian, and of later influences apparent in modern Athabascan culture, across Bering Strait before that region was occupied by the highly specialized maritime Eskimo culture. This would not necessarily imply a similar antiquity for manifestations as far removed as those of New England, where there is no direct evidence of any very great age for the Laurentian.

The transfer from Siberia to America of this culture would go far toward providing the Asiatic basis for American Woodland culture suggested by McKern,<sup>90</sup> and would explain many of the inter-continental similarities cited by von Richthofen.<sup>91</sup> The numerous and undoubted connections throughout the forest zone demonstrated by ethnological research must have some archaeological counterpart, and the Laurentian culture appears to be the most logical choice, both because of its Old World affinities and its chronological position in the American forest zone. The most appropriate closing note is nevertheless one of caution. The vague Siberian Neolithic and the total lack of information from most of the Canadian forest zone are an effective barrier to any final conclusions, and even if the suggested Old World origin of the Laurentian should ultimately prove to be correct it would not solve the problem of Athabascan cultural origins, nor would it shed much light on earlier migrations from Asia to America.

MUSEUM OF NATURAL HISTORY  
UNIVERSITY OF KANSAS  
LAWRENCE, KANSAS.

<sup>87</sup> Fewkes, 1937.

<sup>88</sup> Jenness, 1940, p. 12.

<sup>89</sup> Collins, 1937, pp. 293, 294, 320.

<sup>90</sup> McKern, 1937.

<sup>91</sup> von Richthofen, 1932.

# PHYSICAL TYPES OF THE NORTHEAST

W. W. HOWELLS

**T**HREE is not a great deal of material for the Indians of northeastern North America, whether in the form of crania or of information on the living, and a review of physical types can hardly be conclusive. Nevertheless I will try to make such a summary, primarily to bring together the data and views of writers who have already concerned themselves with the area, and to emphasize those general points which they have shown to be important. The main fact is obvious: it is that the northeast seems to have acted as a refuge area, as might be expected. This makes information about its physical types doubly important; and any signs we can perceive of well-defined forms, or of marginal ones, or of the replacement of one type by another, will be relatively that much more valuable, because they apply to the outermost corner of North America.

I shall try first of all to plot out the information geographically and in simple fashion, to see what the possible significance of this distribution is, and after this to point out where further hope may lie. It goes without saying that this hope will be found mainly in the fullest archaeological understanding of what skeletal material may be found in the future, since we are unlikely to learn much that is worth while from the living.

To begin in a general way, the most striking physical characteristic of the area is its predominant dolichocephaly. Hrdlicka<sup>1</sup> was the first to insist on the importance of the fact. He presented the material on a map which showed the entire northeast to be dolichocephalic down to where, in Virginia and to the westward, brachycephalic types seem to thread in upon the margins. He did, however, believe that there was a brachycephalic admixture in the western portion, represented by an element of round-headedness which he did not think was due merely to variation within a sub-dolichocephalic population.

Dixon, in his *Racial History of Man*, went somewhat further along the same line. He likewise emphasized the importance of the prevailing dolichocephaly, and especially its implications in relation to the rest of the continent. That is to say, he believed that the northeast has probably been a refuge area for several long-headed types which were in all likelihood representative of the first Indians to migrate to the Americas. He and

<sup>1</sup> Hrdlicka, 1916.

Hrdlička perhaps came a little short of recognizing the proper degree of round-headed elements in the area, as it is indicated by later material. However, they were essentially quite right, the northeast being the one great dolichocephalic region of any proportion in America. Dixon also gave the distribution of types by his particular form of analysis, in some detail, and he is corroborated quite fully by the figures which Hrdlička published<sup>2</sup> shortly afterward. I shall therefore give for part of the area a very brief

TABLE I. MEAN MEASUREMENTS OF NORTHEASTERN CRANIA, MALE SERIES  
(Hrdlička, 1927)

|                                 | Number | Length | Breadth | Cranial Index | Bizygomatic diameter | Nasal breadth |
|---------------------------------|--------|--------|---------|---------------|----------------------|---------------|
| Maine (central coast)           | 6      | 190.7  | 138.7   | 72.7          | 134.5                | 23.1          |
| Massachusetts bay               | 14     | 189.3  | 137.8   | 72.8          | 137.1                | 25.7          |
| Manhattan                       | 11     | 192.3  | 139.1   | 72.3          | 131.9                | 24.3          |
| Rhode Island                    | 6      | 184.3  | 135.9   | 73.7          | 133.3                | 27.8*         |
| Connecticut valley              | 9      |        |         | 75.2*         |                      | 26.6*         |
| New York, general               | 19     | 189.2  | 140.2   | 74.1          | 141                  | 27.1          |
| Iroquois, northwestern New York | 33     | 188.6  | 137.7   | 73.           | 138.4                | 27.4          |
| Huron, southeast Ontario        | 15     | 188.0  | 138.7   | 73.8          | 141.3                | 26.3          |

\* Calculated from figures of M. V. Knight, 1915.

digest based mainly on these two agreeing sources, interpreting Dixon's types by straight craniological descriptions. This supplies two sorts of methods: Hrdlička's mean measurements on one hand, and Dixon's analysis on the other, which is a rigid and objective dissection, quite different from the use of mean figures. To these I should like to add, at some points, as another sort of material, some impressions of my own. They were gathered from a cursory examination of crania in the Peabody Museum from New England and New York, including a handful of recently recovered Red Paint skulls on loan from The Peabody Foundation, Andover.<sup>3</sup>

<sup>2</sup> Hrdlička, 1927. Various of these figures are presented in Table I; unfortunately the series, including only material in the National Museum, are very small.

<sup>3</sup> I do not approve of a free use of any such subjective approach as this. It is unscientific, and it is what physical anthropology has been trying to get away from for a hundred years. However, I feel more and more that craniometry alone has its limits, a fact which has something to do with our present difficulties in solving racial problems. Furthermore, the sheer

We may start at the boundaries of the Eskimos of Labrador and Greenland, who are of course short, long-headed and narrow-nosed, and proceed south. The Micmacs of the Maritime Provinces were also apparently dolichocephalic and leptorrhine, though tall, but the characters of the Micmacs are vague.

In Maine generally, however, and particularly in the shell heaps, the crania supply us with something more definite. The type is long-headed and leptorrhine still, but Dixon differentiates it from the Eskimo groups by finding it (in his own terms) Mediterranean rather than Caspian; that is, lower in the vault. This cranial population, and Hrdlička's figures agree, extends down the shore of Massachusetts Bay, and Hrdlička's material would indicate that it is also present in the vicinity of New York City. According to my own impressions, if there is anything about the crania which would stand out from an ordinary generalized Indian type having the metrical characters described, it is that there occurs in certain individuals an attenuated but visible Eskimo-like character, mainly in facial form. This is to be seen only rarely in eastern Massachusetts skulls, somewhat more in the Maine skulls, and most of all in three out of four Red Paint crania which I examined (Plate I, a). It is only a vague expression of the character that appears so crisply in actual Eskimo crania, but it remains if a comparison is made with Eskimo skulls, even in some detail. Aside from dolichocephaly and leptorrhiny to begin with, there is present the Eskimoid disharmony of a large, broad and heavy face on a long skull, with malars which are jutting, well brought forward, and flat in front, with a narrow nose, and somewhat pinched nasalia set in the middle, with a high nasal root and no nasion depression. There is something of a sagittal elevation and a marked occipital protrusion. I do not mean to convey an idea that this Eskimoid character is absolute, since such features as a wide and heavy palate are missing. Nor is it manifest in most of the skulls. But it is fairly convincing when it is present. It is, as I said, most pronounced in the few Red Paint skulls, and becomes very rare and attenuated indeed in the eastern Massachusetts crania, and it is not to be found at all, apparently, outside of the region I have so far covered.

In western New England, New Jersey and New York, the crania are also long, but the noses are perceptibly broader, according to Hrdlička's data

---

lack of cranial material from the northeast forces one away from statistical methods, which with small samples can become useless and misleading. It might be opening Pandora's box to admit subjective descriptions and assertions in this manner, but it has possible merits. Dr. Hooton's application of the method to the Pecos crania was not met with undiluted acclaim nor yet with the attention it deserves.

PLATE I. Crania from Maine and New York. *a.* Cranium from Red Paint Grave, Blue Hill, Maine.  
*b.* Cranium from New York.

*e*

*a*





and description, and Dixon expressed the same facts in finding a general predominance of his Proto-Negroid type. Still other figures<sup>4</sup> also bear this out, and indicate that there is a dividing line about at Cape Cod, and east of the Connecticut valley. Eastward of this, the mean nasal width is 25 mm. or less, while to the west it is 26 mm. or more, excepting only in the crania already mentioned from around New York City. There seems to be only minor variation in measurements, of no visible importance, in the whole of this western area, as far as the Niagara River and western Pennsylvania. Furthermore, latter-day Iroquois and Algonkian peoples were not differentiated physically, as far as can be told. From the figures, in fact, it is not easy to differentiate this whole population from that of Maine and eastern Massachusetts,<sup>5</sup> but the distinctions are nevertheless sufficient to satisfy most writers. It is also possible to perceive something of a difference in facial type. Just as in eastern New England there appears sporadically a dimly Eskimo-like facial skeleton, so to the west there is to be seen in certain of the crania a different type, which is equally as definite as the first, though no more so (Plate I, b).<sup>6</sup> The face has an oblong form in the main. While the malars are broad, their outer surfaces are vertical, rather than somewhat sloping and flaring, as in Eskimos, and the sides of the head and of the jaw are likewise more generally vertical. Beyond this, the character is not easy to describe, and in any case its distinctions, as far as they exist, are not apparent in ordinary measurements. The brow ridges are marked, and instead of being bunched in the glabellar region are more evenly swollen all along the upper margins of the orbits. The nasal root is concave, and is not narrow. While I hesitate to generalize or make assumptions, it is my judgment that this facial type has affiliations mainly in the central southeast, as in Kentucky and Tennessee, as well as further west, although these areas are predominantly brachycephalic or nearly so, in their cranial representations. I might add that this facial form has a resemblance also to the so-called Centralid type of some workers, although the latter is short-faced and round-headed.

For the area so far covered, therefore, Dixon's analysis and the figures of Hrdlicka and others indicate a dividing line in eastern Massachusetts within a generally dolichocephalic population. Agreeing with this, the divisions also appear to be distinguished by the presence of two differing facial or

<sup>4</sup> Marian V. Knight, 1915.

<sup>5</sup> Von Bonin and Morant, comparing the two total groups by means of the Coefficient of Racial likeness, could find no significant difference. Von Bonin, 1938.

<sup>6</sup> Like the Eskimoid form, which is not to be seen here, it is manifest mostly in rugged masculine crania.

cranial types. I do not mean to imply that these are the basic types of their respective areas, but only that a certain number of the crania obtrude themselves as having a special character. I am not inclined to think that this indicates something fundamental, nor do I mean to suggest that these two types are the only two such "morphological types" (to use Hooton's expression) in the area, leading to any idea that the population is reduceable to them alone. It is well known, for example, that the crania of the whole eastern United States, especially in the northern portion, often exhibit a character which has more than once been called Caucasoid.<sup>7</sup> This character is not to be seen in the western part of the country, where the face is shorter, the nose is lower and alveolar prognathism is more marked. In the east, it is expressed in long and straight faces, which are not very broad, with moderately high noses, and the effect is an approach to a white character perhaps equal to that seen in certain Polynesian crania, though of course without resembling the latter.

This dolichocephalic core makes up the southern, or American half of the northeast. Outside of it, in the midwest and the southeast, the cranial index is higher, rising to 77 or 80 or above in Kentucky. In historic times brachycephals seem to have become important in New York itself, living Senecas as well as their most recent crania having far higher indices than the body of proto-historic material. The crania from Kentucky are narrow-nosed, while those from Ohio and the western region are broader-nosed, so that the round-headed population which seems to have surrounded the northeast need not be thought of as a single one.

The remaining peoples of the northeast are, or were, the Iroquois north of Lakes Erie and Ontario, and the Algonkians of eastern Quebec and Labrador. Information for all these is incomplete, and it is to be remembered that the Canadian Iroquois underwent a good deal of breaking up and absorption at the hands of the Five Nations in recent times.

To begin with the Ontario Iroquois, Dixon thought that the Huron, compared with the New York Iroquois, represented a return to the narrow-nosed Algonkian type of Maine. However, other measurements than those he used do not make the Huron very long-headed, and the nose is absolutely broad, if relatively narrow. If they depart from the New York Iroquois, it is perhaps in the direction of slightly shorter heads. The Neutrals, to the west, north of Lake Erie, have definitely rounder heads, as have the Erie, south across the lake from them. It appears more likely therefore that the

<sup>7</sup> I gather that Neumann considers this an attribute of the "Sylvid" cranial type, in which he would include the whole pool of northeastern long-heads within which I have pointed out two less definite forms.

Iroquois peoples as a whole were exposed to a certain amount of brachycephalic and broad-nosed admixture in the west, both north and south of the lakes; and that the Hurons do not really depart in type from the League Iroquois, and consequently introduce nothing beyond what we have already noted for this whole part of the northeast.

Further to the east, the Algonkian Naskapi and Montagnais of the interior are unexpectedly round-headed, considering the rest of the area. Hallowell<sup>8</sup> obtained on the living an index of 81, and Boas a similar figure. These are the southerly bands; Stewart,<sup>9</sup> publishing the results of Strong's measurements of the same people in Labrador, thinks it likely that the latter are somewhat more like the Eskimo. Hallowell finds no Eskimo likenesses in his own series. It is hard to compare the nasal width of the living with crania, but these Algonkians appear to be narrow-nosed. They are known to be mixed with whites to some degree, but there is no reason to think that this is responsible for the higher index of the head. Nor should it be traced offhand to the round-headed influences which bound the Iroquois on the west, particularly in view of the narrow nose. We have, therefore, a definitely round-headed group in the northeast. Hallowell suggested that their affiliations were to be found among brachycephals to the west, possibly the Athabascans. This estimate is well supported by Grant's figures for Chipewyans on Lake Athabaska, which are very much like those given by Hallowell. (Again, physical type is no respecter of language.) Furthermore, it seems that the Montagnais and Naskapi are definitely late arrivals, in the eastern and northern parts of their present territory at least, so that a recent derivation of them from the west is not illogical.

However, this is not the only possibility, as will be seen, nor is it a full and simple explanation for the presence of round-headed elements in this northern region. Unfortunately there are no crania from the area. The Micmacs, to the eastward, were longer-headed than the Naskapi but, beyond them, the Beothuks of Newfoundland, the last people whose physical type I shall cite, were brachycephalic, as far as can be told. The four skulls which have been described<sup>10</sup> range in the cranial index from 78 to 82, being nearer the latter figure in the mean. This is little evidence enough, but it is too much to permit us to suppose that these four crania happen to represent by chance, the round-headed end of the range of variation of the tribe, and that the Beothuks actually had a low mean index like that of the Maine Indians. That much seems clear, and in any case the skulls do not strike the eye as resembling the New England Dolichocephals. It is difficult to

<sup>8</sup> Hallowell, 1929.

<sup>9</sup> T. Dale Stewart, 1939.

<sup>10</sup> Busk, 1875; Prest, 1896.

make out more of the character of the crania, except that the nasal aperture is relatively high and narrow, with a compressed root, and that the Beothuks were described by one man who knew them well as being handsomer than the Micmacs, with aquiline noses. They have also been described both as extremely tall and as of middle stature, probably by irresponsible observers in every case. It appears, altogether, as though they differed from the Micmac to a fair degree, but nothing is known about them which would differentiate them from the Montagnais and Naskapi.

All the foregoing gives us a static picture of the northeast, a picture which in the main is that of conditions in late protohistoric and early historic times. South of the St. Lawrence and in southern Ontario as well, there was an old population which was long-headed and long-faced, and relatively minor differences in measurement can be found between the eastern and western portions, the latter being mainly broader-nosed. It is not clear from the material whether two fundamentally different types are present, or whether one division or both has simply been modified by external influences. At any rate, one or the other alternative is indicated by the presence of a differing morphological appearance of some of the crania, those in the east recalling the Eskimo and those in the west pointing to the south, or perhaps further west. Southward of the whole area there were round heads with narrow noses, and westward there were round heads with broad noses, and this latter type would appear from the figures to have influenced the westernmost Iroquois, both south of Lake Erie, and north of it in Ontario.

North of the St. Lawrence, in the east, the Montagnais and Naskapi were sub-brachycephalic and narrow-nosed, and the Beothuk of Newfoundland were perhaps similar or even more round-headed. The hunting tribes of the mainland might be a recent introduction from the west; but if this were so, it would deny any connection with the Beothuk, who become no less mysterious as time goes on.

This, as I said, is a static picture, and an example of the limitations of craniology working alone, with poor and uneven material. What is needed above all now is a scale of time; in other words, the aid of archaeology. This combined with relatively few crania would explain much of what we already have in hand. Archaeology is just now coming of age in the area, an approach to racial questions which is progressing rapidly in the middle west and south, in the hands of half a dozen physical anthropologists, in such a way as to show what might be hoped for in the northeast. In Kentucky, for example, there has been a continuous effort in this direction which should allow some general coordination of archaeology and craniology before long.

In these surrounding regions, to the south and southwest, it appears that the earliest cultures were those of dolichocephals, with brachycephals becoming generally dominant or important as the higher, pottery-using cultures appeared; in other words, there is a clear picture of an invading type, moving in a generally northeastward direction. The brachycephals are assembled by several students under one type, the Centralid, and the dolichocephals under another, the Sylvid.<sup>11</sup> Descriptions of the latter type do not always agree, however; Neumann characterizes it as having a long, high skull with a narrow nose and a somewhat Caucasoid look, which would ally it with the generalized type of New England, but other Sylvid crania have been described<sup>12</sup> as short-faced, and having if anything more the facial appearance of the New York and New Jersey crania. I do not know, therefore, how these students would deal with the two slightly different northeast forms with reference to the Sylvid type in general. Some differentiation will probably be made within the latter.

At all events, recent research in the Mississippi basin shows us a generalized tableau of an eastern United States which was dolichocephalic throughout in ancient times, turning into a drama of brachycephalic infiltration and inundation which at the opening of historic times had not yet moved onto the northeastern stage, leaving this area alone the preserve of an older type or types. But it is not likely that the northeastern stage had no events of its own, or remained unaffected. Unfortunately, few human remains have been recovered recently, and there are almost no critical cases of stratification such as we now need. The major exception is furnished by Ritchie, in the form of crania from three levels in New York; namely, the former Archaic, and 2nd and 3rd period Algonkian, now the Archaic pattern and the Vine Valley and Owasco aspects of the Woodland respectively. The first two cultures were directly connected at the Lamoka Lake site.<sup>13</sup> The three Archaic crania were long, with a mean index of 73.2, and had long faces and narrow noses. (There is no sign in them of either the Eskimoid face type of Maine or of the rectangular face of later New York crania.) The skulls of the second period were brachycephalic and rather heavy, having a mean index of 81.7, with noses and faces which were short and broad. But this is not the type of the more recent skulls, which were dolichocephalic. However, there is actual evidence at the site that the round-heads were invaders, and in contact with the long-heads, and it is conceivable that a mixture of the two might have produced the type of later times, with brach-

<sup>11</sup> Terms adopted from von Eickstedt's classification.

<sup>12</sup> Newman, 1941.      <sup>13</sup> Ritchie, 1932a; 1932b.

ycephaly being largely submerged. At other New York sites, Ritchie has found skulls of the 3rd period Algonkian, or Owasco aspect, which are apparently medium or long, though with wide noses.<sup>14</sup> Finally, he found at Frontenac Island, an Archaic site, a sizeable group of crania<sup>15</sup> an with intermediate mean index, which apparently indicates an even earlier appearance of brachycephals than at the Lamoka Lake site.

Therefore, taking all his material together, it appears in general that the earliest levels had dolichocephals with narrow noses, the next brachycephals with broad noses and square faces, after which there was a return to dolichocephaly with broad noses and somewhat oblong faces. Dixon more or less guessed that this very train of events had occurred and suggested that the immigrant Iroquois were responsible for the brachycephalic admixture; but the archaeology does not give signs that they had anything to do with it, and considerations of culture persuade Ritchie that the brachycephals, though they came like the Iroquois from the south, were Algonkian speaking.

There is no other material of equal importance to reveal past happenings in the northeast. The newly found Red Paint crania may be significant, after they have been closely compared with those from the Maine shell heaps, and after the relations of the two cultures have been clarified.

In sum, it appears that the older notion of dolichocephaly prevailing throughout the northeast was perhaps substantially correct, and archaeology is discovering the extension of this dolichocephaly all over the southeast at the same levels.<sup>16</sup> In the northeast, however, brachycephals were present in early times as well, and more recently there have been the Beothuks, important in this respect because of their peripheral position, and the Montagnais and Naskapi, important because they are Algonkian peoples with a hunting culture, so that both groups can claim notice as possibly ancient inhabitants. This all leads to the suggestion that the predominant dolichocephaly does not imply full racial homogeneity in the area, and that regional varieties, including brachycephals, existed well back into the pre-pottery cultures, a matter of some centuries.

One other problem, the solution of which is more remote, is that of Eskimo connections within the area. I have suggested that there is a faintly Eskimo-like aspect in some of the Maine crania, but only as a matter of description. However, Shapiro and Seltzer<sup>17</sup> have raised the possibility that

<sup>14</sup> Ritchie, 1934; 1936a.

<sup>15</sup> Information about his unpublished material was kindly given me by Dr. Ritchie.

<sup>16</sup> Collins, 1941a.      <sup>17</sup> Shapiro, 1934; Seltzer, 1933.

various Eskimo and Indian groups were related because of likenesses in measurements. Shapiro pointed out the close resemblance of cranial means for Eskimos of the Point Barrow region with the Huron, and noted also approximation in measurements of eastern Eskimo and New England crania. Stewart<sup>18</sup> on the other hand regards the evidence as very dubious, although archaeology has some tenuous indications of possible connections in the northeast. It may be mentioned that Jenness said that the Cape Dorset culture might have affiliations with both Beothuk and Red Paint. If the skulls are considered, those of the Red Paint culture might be thought of as possibly related to the Eskimos, but certainly not those of the Beothuk.

UNIVERSITY OF WISCONSIN  
MADISON, WISCONSIN.

<sup>18</sup> Stewart, 1939.

# LINGUISTIC CONSIDERATIONS OF NORTHEASTERN NORTH AMERICA

BY CARL F. VOEGELIN AND E. W. VOEGELIN

**N**ORTHEAST" will be used only for that area which Speck outlined in his paper "Culture Problems in Northeastern North America."<sup>1</sup>

The two parts of this area which we take as a whole are first the region of the Montagnais, Naskapi, the Mistassini-Cree, and presumably the Beothuk, generally north of the St. Lawrence, east of James and Hudson's Bay, south of the Eskimo line, and including Newfoundland. Second, the Wabanaki region, which extends as far south as the Penobscot river in Maine.

The tendency of all cultural consideration is to extend the area beyond Speck's limit. In the Wissler-Thompson map of North American Mythological Areas, Speck's second division is carried south along the coast to the Delaware and Nanticoke, that is, as far south as Maryland. Flannery's Coastal Algonquian Area<sup>2</sup> extends even farther south, to the Powhatan of Virginia, but does not include Speck's first division of the Northeast. Kroeber<sup>3</sup> definitely extends Speck to the west, including most of the territory which Osgood<sup>4</sup> treats as the North Athabascan Area; less definitely, Kroeber goes south along the coast after the fashion of Wissler,<sup>5</sup> Thompson,<sup>6</sup> and Flannery.<sup>2</sup>

Linguistic consideration must of course be given to these regions lying beyond Speck's Northeast area. Within the Northeast, Algonquian is the characteristic language family. This family extends well out of the Northeast; and fairly engulfs two other language families, the Iroquois as a whole and the Siouan family as represented by Winnebago, Tutelo and Catawba. The Beothuk family is not engulfed by Algonquian, or at least not any more—not since the speakers moved from Labrador to Newfoundland. Eskimo is clearly marginal, both to the Northeast area and to the Algonquian family. While Athabascan is well out of Speck's Northeast, the Mackenzie River languages of this family are spoken in almost one half of Kroeber's extended area. For one reason or another, then, this paper will consider six language families: Algonquian, Iroquois, Siouan, Beothuk, Eskimo, Athabascan.

<sup>1</sup> Speck, 1926.

<sup>2</sup> Flannery, 1939a.

<sup>3</sup> Kroeber, 1939.

<sup>4</sup> Osgood, 1936a.

<sup>5</sup> Wissler, 1914.

<sup>6</sup> Thompson, 1929.

### ATHABASCAN

The tribal names which Kroeber culled from the older literature are now superseded by those given in Osgood's field reports. Osgood's tribal names, in some cases silently equated with the older names, were recently combined by us in terms of separate languages. It is possible to further equate, or rather partly equate, these separate languages with Kroeber's cultural sub-areas.<sup>7</sup> Thus, two separate languages, or at least some of the dialects of two languages, namely (1) Dogrib-Hare-Bear Lake, excluding Dogrib; and (2) Chipewyan-Yellowknife-Slave, excluding Slave, are spoken in Kroeber's sub-area 16b. Similarly, seven separate languages or dialects of these languages, namely (3) Kutchin and (4) Tanana-Koyukon-Han-Tutchone and (5) Sekani-Sarsi-Beaver-Stonies, but specifically excluding speakers of the Sarsi dialect, and (7) Thaltan-Kaska, excluding Thaltan, and finally, if our synonomy is correct, (8) Tanaina-Ingalik are all spoken in Kroeber's sub-area 16a, as are also dialects from our languages (1) Dogrib and (2) Slave. For sub-area 16c we have the separate language (6) Carrier-Chilcotin—but Kroeber excludes the Chilcotin dialect. For sub-area 16d we have the separate language (7) Thaltan-Kaska—but Kroeber excludes the Kaska dialect from 16d, having already placed Kaska in 16a.

Since the limits of the cultural sub-areas in certain cases cut across the location of dialects which are said to combine into one language, some questions arise. Were there many mistakes made in placing cultural boundaries or in combining dialects as separate languages? Error is always possible, especially so in this case where neither Kroeber nor we have had the advantage of first hand field contact. Does the arrangement just given correctly reflect the facts for contemporary or ethnographic times? If so, we have implicit in this arrangement grounds for historical interpretations. Either dialects have yielded one to the other, or the region of one cultural sub-area has been expanded at the expense of another in relatively recent times to make possible the dialects of our language (1) and (2) being spoken both in area 16b and 16a, the dialects of our language (5) being spoken both in area 16a and the Northern Plains Area, the dialects of our language (7) being spoken both in area 16a and 16d, the dialects of our language (6) being spoken both in area 16c and the Fraser Area.

A much closer relationship of dialects grouped as separate languages on the one hand, and cultural sub-areas on the other, would have resulted had we used Osgood's arrangement of the latter. However, we were so strongly influenced by Osgood in finding the dialect-language boundaries in the first instance that the better correlation would be almost suspect.

<sup>7</sup> Kroeber, 1939, Map 6.

Whether the very partial correlation here presented calls for critical revision or for historical interpretation, it can at least be said that the underlying cultural summary and linguistic summary were arrived at in complete independence.

### IROQUOIAN

The Iroquois tribes did not live in the Northeast as regular dwellers; but as visitors in the area they are known from the time of the earliest records. The fact that their visitations were sporadic and unwelcome to the regular dwellers is not correlated with a lack of cultural influence. Indeed, ethnographers repeatedly call attention to Iroquois influence in the Northeast. This alone would seem to call for linguistic consideration of the Iroquois, quite aside from the occasional archaeological evidence which suggests a protohistoric residence of the Iroquois in some parts of the Northeast.

In distribution the Iroquois tribal groups appear like so many islands in an Algonquian sea, clustering in a solid block south and east of Lake Erie, and more thinly spread westward away from the same lake. Even the Cherokee in the south were in one historic period flanked on the northwest and southeast by the Algonquian Shawnee. The Tuscarora, extending toward the Atlantic, were east of the Cherokee and separated from the Cherokee by Siouan tribes; they faced coastal Algonquians, to be sure, but unlike other Iroquois they were surrounded by Siouan rather than Algonquian people. We know next to nothing of Tuscarora linguistically; and despite their interestingly anomalous neighbors, it is not even certain that Tuscarora should be counted as a separate Iroquois language. Cherokee dialects are now being adequately studied. Some of the northern Iroquois tribes are extinct, as the Neutrals and the Erie (and there are other extinct tribal names): who knows how these affiliated dialectically? Even for the four living North Iroquois languages, Seneca-Cayuga-Onondaga, Oneida, Mohawk and Wyandot (=Huron), we have nothing in any way comparable to a modern grammatical sketch. The fragments of structure known to us always excite linguistic interest. There is no way of accounting for the lack of work on Iroquois languages other than that the Iroquois tribes are too closely located to centers of scholarship; it has been observed many times that scholars favor romantically distant tribes. The lack of knowledge of Iroquois languages is a loss for all ethnographers interested in Iroquois-Northeast relationships, since direction of borrowing in certain cases can be established only if the name of the borrowed cultural item is known together with the distribution of the item. Dictionaries compiled by missionaries are difficult but could be used in a limited way for this purpose.

Despite the fact that we have nothing but fragments on the structure of

any one Iroquois language, and even less on the internal relationships of Iroquois languages, archaeologists are cheered in thinking of tribes from the distant Plains—also essentially unknown linguistically—‘linked’ with Iroquois, not to mention other links of an amazing chain.

After Iroquois is reconstructed, which will necessarily be delayed until two or three Iroquois languages are first described, then the reconstructed or proto-Iroquois language can be compared to another prototypic language, say proto-Siouan, just as two known contemporary languages might be compared. It is always possible and sometimes suggestive to short-cut indirect procedures by comparing the languages of one family directly with those of another family. This has been attempted by Allen for Iroquois languages and Siouan languages. Linguistic methods do not include techniques for disproving a postulated linguistic connection; they do include techniques for proving linguistic connections. All we can say is that Allen did not employ the latter.

### SIOUAN

The Siouan family is mentioned only to be dismissed. The members of this family move on an east-west axis until they reach the Mississippi; they do not follow the north-south axis of the Iroquois. The three groups which concern us in the internal relationships of Siouan languages are the Eastern, which includes Catawba and possibly other dialects or languages now extinct; and the Ohio Valley group, which includes the Tutelo located east of the Alleghenies and north of the Catawba in historic times; and a northern member of the Mississippi Valley group, Winnebago, located throughout historic times west of Lake Michigan. In contrast to the Coastal Algonquians, the tribes surrounding the Siouan Winnebago were highly mobile; and yet the Winnebago remained stable after reaching Green Bay.

### WESTERN ALGONQUIAN

In a special paper on one of the divergent western Algonquian languages Wissler expresses what is perhaps the consensus of anthropological opinion: speakers of Blackfoot dialects, of Cheyenne dialects, and of Arapaho dialects are western immigrants from the central region. The evidence is more or less indirect for Cheyenne and Arapaho; and the westward movement of the Blackfoot appears to be postulated on the analogy of the other two.

### CENTRAL ALGONQUIAN

The Central Algonquian languages are distributed on a general east-west plane. More specifically, three distinct Central Algonquian tiers can be discerned: (1) the upper tier extending from the Western Plains Cree, Swampy

Cree, Maskegon Cree, eastward through an area of other Cree groups, including the Tete de Boule, to and including the Montagnais and Naskapi; (2) the middle tier extending from the western Plains Ojibwa eastward through an area of various Ojibwa and Ottawa groups to and including the Algonkin whose territory terminated roughly along the middle reaches of the St. Lawrence; (3) the lower tier which includes what we propose to call the mobile Algonquians, altogether represented by five languages: Sauk-Fox-Kickapoo, Menomini, Miami-Wea-Piankeshaw-Peoria-Illinois, Potawatomi and Shawnee. A word must be said about each of these tiers; and the gross movements of the mobile Algonquians in the lower tier must be discussed.

The upper tier is inhabited by speakers of one language, Cree-Montagnais-Naskapi. That is to say, linguists count the numerous dialects of this tier as one language; ethnographers are more apt to think of Cree dialects as constituting one language, Montagnais-Naskapi another. There is no real disagreement here however, merely two ways of counting. In the latter, a separate language is marked by that favorite phrase of the anthropological literature, 'mutually intelligible dialects.' If we are to follow the linguistic way of counting, however, then all the dialects within one language need not be intelligible to each other, as long as contiguous dialects are mutually intelligible. We do follow this way of counting, and therefore acknowledge that in the Cree-Montagnais-Naskapi language the Montagnais neighbors of the Beothuk might not be able to understand the Plains Cree neighbors of the Blackfoot and Sarsi; yet so long as speakers of adjacent Cree dialects and speakers of adjacent Montagnais and Naskapi groups can understand each other, we are justified in setting up Cree-Montagnais-Naskapi as a single, separate language.

Similarly, the middle tier is inhabited by speakers of one language, Ojibwa-Ottawa-Salteaux-Algonkin. This single, separate language is also set up according to the linguistic way of counting. It is possible to say a little—very little—about the dialects of the language of the first tier and of the language of the second tier.

Before his death, Michelson worked for some years on the distribution and interrelations of the Cree-Montagnais-Naskapi dialects. He traces on one map<sup>8</sup> the various reflexes of 'original' / in these dialects. A reflex of *n* is found in the extreme east along the Labrador Eskimo line; but a few dialects in the extreme west also show the *n* reflex as do a long string of dialects on the west coast of James and Hudson's Bay. Speakers on the

<sup>8</sup> Michelson, 1939.

opposite or eastern side of James and Hudson's Bay show a *y* reflex; but *y* dialects are also found sporadically in the most westerly dialects of the language. The northernmost dialect appears to have a unique reflex, *θ*. From the northwest to the southeasternmost Cree dialect, Tete de Boule, the reflex of *r* is sporadically distributed. Finally, *l* remains without change in a southeastern block of the Cree-Montagnais-Naskapi area. A similar picture (of none too simply distributed isoglosses) can be made before long for the Ojibwa-Ottawa-Salteaux-Algonkin dialects of our middle tier, thanks largely to work done with informants at the Linguistic Institute both at Ann Arbor and at Chapel Hill (1938-41).

The lower tier is inhabited by speakers of not one but five languages, and these languages are not fixed in their locations during historic times as is the case, relatively speaking, with the upper and middle tier languages.

While Sauk-Fox-Kickapoo constitute a single language, tribal movements must be traced in terms of the individual dialects. Of these, Sauk and Fox are scarcely distinguishable linguistically, while Kickapoo is a relatively divergent dialect.

Traditionally, the Sauk claim an early home north of the Great Lakes; there is also some indirect evidence that prior to their moving into Wisconsin they had lived in the Lower Peninsula of Michigan. However in 1634, when first contacted by Nicolet, the Sauk were established on the shores of Green Bay, in east-central Wisconsin, and in 1665-66 they are said to have taken the northern part of the Green Bay area as their territory. In 1671-72 before engaging in a raid on the Sioux, the Sauk moved their villages eastward to Machimilimackinac and Manitoulin Id. This however was only temporary; later they re-established themselves at Green Bay. In 1721 they were on the east bank of the Fox river, near the point where it enters the southern end of Green Bay. Twelve years later they evacuated a fort on the west bank of the same river, and removed westward across Wisconsin and the Mississippi to the lands of the Iowa Indians. During the next few decades Sauk bands were in the Illinois country, east of the Mississippi; in 1766 the tribe had its chief town on Wisconsin river, north of the Wisconsin-Illinois line. A Missouri river band, at the close of the century, wintered each year at St. Louis, Missouri; it was the headmen of this band who signed away Sauk rights to their lands in Wisconsin, Illinois and Missouri. This act led to a chain of events which resulted in the Sauk living in Iowa again for a time; in 1837, however, they disposed of their Iowa lands and were given a tract in Kansas. In 1867 the Sauk ceded these lands in Kansas and were given lands in what is now central Oklahoma, where their present-day descendants still live.

The Fox, like the Sauk, state that their early home was north of their historic habitat in central Wisconsin; originally, they say, they occupied the lands on the southern shore of Lake Superior. When first met by Nicolet in 1643, the Fox lived near Lake Winnebago or on Fox river. In 1669 Allouez found some Fox in winter quarters at DePere rapids, Wisconsin; he also reports that the dwelling place of the Fox was twenty-five leagues distant, probably on Wolf river in central Wisconsin. In 1746 the Fox were on the west bank of Fox river, 37 miles south of Green Bay. Later they were driven southwestward down the Wisconsin river, and settled on the north bank about 20 miles from the mouth of the river. Around 1750 they moved farther south, taking possession of the lands of the Illinois Indians; finally they removed west of the Mississippi, with the Sauk, to the territory of the Iowa Indians. In 1837, the majority of the Fox left Iowa and moved to Kansas, where they stayed for about twenty years. In 1859 however, the Fox in Kansas rejoined their tribesmen in Iowa, and the group finally purchased a small piece of land on Iowa river, near the present Tama City, where their descendants now reside.

The Kickapoo, unlike the Sauk and the Fox, apparently lack any tradition of an early northern residence or migration therefrom. When first met by Allouez in 1667-70, they were living near the portage between the Fox and Wisconsin rivers, in central Wisconsin. A few years later part of the tribe moved southward to settle on or near the Milwaukee river. About 1765 they went farther south around Peoria, Illinois. One band, the so-called Prairie band of Kickapoo, moved westward into Central Illinois, centering around the Sangamon river; another, the so-called Vermillion band, moved eastward to settle on the Vermillion and Wabash rivers, in Indiana. By 1820 both bands had ceded their lands in Illinois and Indiana; shortly afterward they removed westward across the Mississippi into Missouri and Kansas. A few decades later many of the Kickapoo removed to Texas, and from thence into northeastern Mexico, where a goodly portion of the tribe now resides. The American Kickapoo are at present living in central Oklahoma near the towns of Tecumseh and Shawnee.

In contrast to all the other tribes among the mobile Algonquians, the Menomini have shifted about comparatively little during the historic period. This tribe may once have resided south of Machimilimackinac, in the Lower Peninsula of Michigan, but there is only indirect evidence for their location at this point. When first encountered by white explorers, around 1634, the Menomini were located at the mouth of the Menomini river; this river forms part of the dividing line between Wisconsin and the Upper Peninsula of Michigan. Until 1852 the home of the tribe was on or near this

river; at times their villages extended south as far as Fox river, which is in central Wisconsin. In a claim to their possessions, made in 1831, they include the central part of the Upper Peninsula of Michigan as part of their territory. They are now living within the limits of their aboriginal area, on a reservation near the headwaters of Wolf river, Wisconsin.

The Miami-Wea-Piankeshaw-Peoria-Illinois dialects constitute one language, the only Central Algonquian language to have become extinct. We shall probably never know exactly how the dialects of this language were interrelated linguistically. Insofar as we can trace their history, we might distinguish in terms of general direction the movements of the Miami-Wea-Piankeshaw on the one hand, and Peoria-Illinois on the other.

The Miami, when first they became known to the French in 1654, were living northwest of Green Bay, Wisconsin; the village Radisson and Groseilliers located may have been a northern outpost of this tribe, since the main part of the Miami were apparently living farther south, between the southern end of Lake Michigan and the Mississippi river. In 1668 and 1670 some Miami settlements were located at the headwaters of a stream which was probably the Fox river, in central Wisconsin. Within a decade later, a Miami village is mentioned near the portage between the Kankakee and the St. Joseph's river, in north-central Indiana. During the early part of the eighteenth century the Miami occupied the country north and northwest of the upper Wabash river. From there they gradually moved eastward across the northern part of Indiana, and for a time lived in northwestern Ohio on Laramie Creek, a branch of the Big Miami River. After 1763 they left the Ohio settlements and returned to northeastern Indiana, where they stayed until many moved westward across the Mississippi, in 1827. One band which remained in Indiana occupied a reservation in Wabash county until 1872; several of the descendants of members of this band still remain within the state. The remainder of the Miami are now living in the extreme northeastern part of Oklahoma.

The Wea, close associates of the Miami, are first mentioned in 1673. They were then living in eastern Wisconsin, but shortly afterward moved southward. In 1680 they had a village on St. Joseph River, Indiana, and another at Chicago. A part of the Wea went to live at La Salle's fort near Peoria, Illinois, in 1682. In 1719 the Wea had several villages in Indiana, at or near the mouth of Wea Creek, a tributary of the Wabash. By the close of the eighteenth century the Wea villages in Indiana had been destroyed by U. S. troops, and in 1820 the Wea disposed of their lands in Indiana and removed first to Illinois, later to Missouri and Kansas, and finally to northeastern Oklahoma.

Like the Wea, the Piankeshaw were also closely associated with the Miami. During the early eighteenth century the Piankeshaw moved down the Wabash to its junction with the Vermillion river, where they made a settlement. A few decades later they moved farther south on the Wabash and established a town at the present site of Vincennes, Indiana, on the Indiana-Illinois line. In the early nineteenth century they moved across the Mississippi into Missouri, from thence to Kansas and finally, to northeastern Oklahoma.

The Peoria seem to have been centered somewhat farther west than any of the other groups mentioned above, at the opening of the historic period. In 1673 they were found by Marquette and Joliet on the west side of the Mississippi, near the mouth of a river which may have been the Des Moines. When Marquette returned two months later from his trip down the Mississippi he found that the tribe had removed eastward and settled near the site of the present city of Peoria, Illinois. Around 1768, almost a century later, the Kickapoo drove the Peoria out of this settlement in Illinois. At about this time a large part of the tribe migrated to Missouri, to the Blackwater Fork; another part of the tribe remained in Illinois, however, until 1832, when they and the Blackwater Fork group sold their claims to their lands in Illinois and Missouri and were assigned lands in Kansas. Later, in 1868, the whole body of Peoria removed to northeastern Oklahoma.

The Illinois consisted of a confederacy of some seven Algonquian-speaking tribes. The movements of one of these, the Peoria, have already been traced. The other tribes of the confederacy were scattered over southern Wisconsin and northern Illinois. In 1673 the village of one of them, the Kaskaskia, was on the upper Illinois river; around 1700 however, the Kaskaskia removed to the vicinity of the present town of Kaskaskia, in southern Illinois. At this date the Cahokia and Tamaroa, two other tribes of the confederacy, were also living in southern Illinois on the banks of the Mississippi. About 1769 refugee remnants from the northern members of the confederacy found haven at Kaskaskia. In 1833 the few 'Kaskaskia' survivors of the Illinois confederacy sold their lands in Illinois and removed west of the Mississippi; they ultimately settled with the Peoria, Wea and Piankeshaw in northeastern Oklahoma.

The movements of the Potawatomi were fairly diffuse after the tribe split into several bands. In general, however, the Potawatomi can be said to have moved, first south, then west, during the historic period.

This tribe reputedly lived in the lower peninsula of Michigan, until driven out by Iroquoian-speaking groups some time prior to 1640. At this date, which marks the first definite record of Potawatomi locations, it is stated

that the Potawatomi were near the Winnebago, on Green Bay, in Wisconsin.

In 1642 some Potawatomi are reported as having taken refuge with the peoples at Sault St. Marie, but in 1648 Ragueneau again located the Potawatomi near the Winnebago. Other references made throughout the seventeenth century also place Potawatomi villages on the western side of Lake Michigan, on an island at the mouth of Green Bay and on the shores of the Bay.

At the close of the century a numerous band is said to have moved south into Miami territory about the St. Joseph river, in southern Michigan; a few continued living until 1728 or thereabouts on the island at the mouth of Green Bay, and a large number settled at Detroit in 1701. By 1800 they had spread over northeastern Illinois, southeastern Wisconsin, southern Michigan and northern Indiana as far south as Pine Creek, a tributary of the Wabash. Between 1836 and 1841 the Potawatomi sold their lands and the majority removed west of the Mississippi; some however remained in southern Michigan and others from Indiana fled northeastward into Canada where they are now living on Walpole Id., in Lake St. Clair. Those who went west settled in western Iowa (Prairie Potawatomi) and in Kansas (Forest Potawatomi). In 1846 both groups removed to southern Kansas; some of them stayed in Kansas, but many moved south into Oklahoma, in 1868. Besides those in Oklahoma, there are at the present time a group of Potawatomi living in Wisconsin (part of the Prairie band), another living on Walpole Id., Ontario, and a fourth group in Kansas.

The early historic locations and subsequent movements of the Shawnee present a complicated picture, of which only the larger outlines can be given here. In general, the Shawnee moved first from the south to the north; their next major movement was westward; and their third, south.

Shawnee traditions concerning the early location of the tribe are confused; certain of the Shawnee divisions are said to have originated in the southeast, but the general tendency among the Shawnee is to emphasize an early northeastern location for the tribe. Sixteenth and early seventeenth-century statements which may refer to the Shawnee would, if verifiable, locate this group in southern New Jersey, eastern Pennsylvania, and western North Carolina; of all these references the southern New Jersey-eastern Pennsylvania ones may be the most dependable, but as yet are not proven. It is only toward the close of the seventeenth century that we can begin to speak with relative certainty concerning the location of the Shawnee. At this time the tribe was split into two groups, both of which were situated far to the south of the Sauk, Fox, Kickapoo, Miami, and the rest of the mobile Algonquians. One group of Shawnee was living in the pied-

mont region of Georgia; the other considerably to the west, across the Alleghenies in the Tennessee-Cumberland basin. A detachment from the Tennessee-Cumberland was drawn off from trade with the Spanish in Florida and joined La Salle at Fort St. Louis, in Illinois, toward the end of the seventeenth century. At about the same time, groups from the Georgia contingent of Shawnee were directing their steps northward, to join the Delaware in southern New Jersey. With the Delaware these groups of eastern Shawnee moved westward through Pennsylvania, to settle in central Ohio. By the middle of the eighteenth century all five political divisions of the Shawnee were represented in Ohio, with villages on the Scioto river or tributaries thereof. Later a second major split came about within the ranks of the tribe. Those of the Shawnee who favored peace with the Americans left the Ohio Valley region and removed to Spanish territory across the Mississippi in Missouri. This was at the end of the eighteenth century. Later this group moved farther west, many of its members, by 1820, reaching the Sabine river region of Texas, then part of Mexico. The hostile group of Shawnee that had remained in Ohio stayed there until 1832, at which time they also moved west, first staying on a reservation in Kansas, and ultimately buying the right to settle on land in the Cherokee Nation, in northeastern Oklahoma, toward the end of the nineteenth century. That group of Shawnee which had been in Texas returned to Oklahoma before the Civil War, went north to Kansas while the war was being fought, and then turned south again, to settle finally on allotments in Central Oklahoma, where they are located at the present time.

### EASTERN ALGONQUIAN

In contrast to the east-west plane of all three tiers of Central Algonquian languages, the Eastern Algonquian languages lie on a north-south plane. For the latter we shall treat the dialect-language problem affecting those dialects actually distributed in the east, and then turn to the more difficult question of internal family relationships: aside from geographic distribution can a linguistic distinction be made between Central and Eastern Algonquians?

Delaware, Penobscot-Abnaki, Malecite-Passamaquody, and Micmac are still spoken; and an unknown number of Eastern Algonquian languages are extinct. A distinction must here be made between living languages and dead languages, for among the latter we are not at all clear where language boundaries begin or end. Names in the literature might reflect languages and dialects or tribes and political confederacies, irrespective of language or dialect. For example, modern work with Delaware dialects has succeeded

in finding a linguistic distinction between two dialects, Munsee and Lenape; we can only guess that the latter may have been the dialect of the Unami and Unalachtigo mentioned in the literature. Similarly, our Penobscot authority, Frank T. Siebert, suggests that the now extinct Pennacook spoke a dialect intelligible to Penobscot. This language, Penobscot-Abnaki-Pennacook, can therefore be accepted with assurance that enough information is available on one of its dialects to provide a basis of including or excluding other dialects known only from fragments which happen to be found in printed sources or manuscripts.

The remaining languages and dialects lack such control. The present writers have not examined such fragments as have been recorded. Fortunately, however, Siebert has for years closely studied both the manuscripts and the published linguistic evidence for this area, and provides us with the following list of languages now extinct. In addition to the four living languages mentioned above, we have eight extinct languages: Nipmuck-Pocumtuck, Massachusett-Nauset-Wampanoag-Cowesit, Narragansett-Niantic, Mohegan-Pequot-Montauk-Quinnipiac-Unqwachog-Naugatuck, Mahican, Nanticoke-Conoy, Powhatan, Pamticough. This arrangement is subject to revision; the evidence upon which it is based is now being prepared by Siebert for publication.

### INTERNAL RELATIONSHIPS OF ALGONQUIAN LANGUAGES

The determination of the internal relationships of Algonquian languages involves two interrelated tasks. One is to set up linguistic sub-groups, comparable at best to Germanic, Italic, Celtic and so on, of Indo-European; or at least comparable to the tentative Eastern, Ohio Valley, and Mississippi Valley groups of the Siouan family. The second task is to state, where possible, the history of certain 'shared' phonemes in the period intervening between the parent language and the daughter languages as we know them.

Each one of the divergent Western Algonquian languages might be counted as a separate sub-group until someone demonstrates that they, or some two of them, share features which will distinguish them from other Algonquian sub-groups. Michelson<sup>9</sup> was able to establish phonetic shifts for the three divergent western languages while using Central Algonquian languages as the basis for his parent language, proto-Algonquian. This suggests that the divergent features of the western languages are innovations rather than archaic features. In other words, after proto-Algonquian times the central languages did not change much from the pre-dispersal, parent

<sup>9</sup> Michelson, 1935.

language; but groups which were later to become Blackfoot, Arapaho, and Cheyenne not only moved west (see Western Algonquian, p. 181) but at the same time, and each independently of the other (hence three sub-groups), underwent spectacular phonological changes. But unless we can reconstruct some intermediate stage between the western languages and proto-Algonquian, nothing is gained but terminological baggage by speaking of sub-groups. Since the innovations of the three languages appear quite different each from the other, there is no basis for reconstructing such an intermediate stage for the western languages; and hence no advantage in postulating a group or sub-groups here.

Critical forms for reconstructing proto-Algonquian can generally be found in Cree, Ojibwa, Menomini, and Fox. Indeed, Bloomfield's earlier comparative study was based exclusively on these four languages, and purported to reconstruct prototypes for nothing more than Central Algonquian. But Michelson's latest work<sup>10</sup> surely suggests that these same prototypes may be regarded as parent forms for all Algonquian languages.

However, in his earlier work, especially in his preliminary report on classification,<sup>11</sup> Michelson was less concerned with prototypic forms and more interested in comparing inflections of the various languages with a view to finding Algonquian groups and subtypes. From this there emerged the much cited Central subtype which includes not only the languages which are geographically central but also the eastern Natick (=Massachusetts) and Delaware. A serious criticism of all this is the fact that if different features were compared different classifications would result. For example, Delaware shares with Penobscot phonemic stress and a fixed or unalternating *l*. We might give great weight to these two features, for they contrast sharply with the habits of almost all other Algonquian languages.

Yet with our present knowledge of the daughter languages it seems futile to set up a separate eastern group based on a more or less arbitrary selection of features. This does not mean that the four central dialects mentioned above contain all the archaic features we need to know for proto-Algonquian. In his latest comparative work Bloomfield makes use of some of the information from the recently studied Shawnee and Potawatomi languages, in addition to the four critical languages already mentioned. In our own study of Delaware consonants, we derived all clusters from proto-Algonquian as based on the four central languages, finding a very interesting development of multiple reflexes: a single proto-Algonquian consonant may yield more than one Delaware consonant. Siebert noted this sort of thing

<sup>10</sup> Michelson, 1939.

<sup>11</sup> Michelson, 1913.

in his review of a Micmac grammar,<sup>12</sup> and tried to give the conditions for the second development from one prototype ('perhaps when medial to identical original vowels'). In subsequent work now in press, Siebert<sup>13</sup> has succeeded in adding a consonant cluster to proto-Algonquian, and this largely by employing Penobscot, Delaware, Massachusetts, and Micmac forms as well as the usual forms from the central languages. It should be noted that the new cluster is set up for proto-Algonquian—certainly not to justify an intermediate stage of proto-Eastern between the eastern daughter languages and proto-Algonquian.

We conclude therefore that it is impossible to reconstruct proto-Western, proto-Central, or proto-Eastern parent languages intermediate between the daughter languages, as we know them, and proto-Algonquian, as it has been reconstructed. Algonquian languages may accordingly be said to resist classification into western, central, and eastern groups in any except a geographic sense.

Rather than resort to ambiguous linguistic groups, it would seem more profitable, in Algonquian, to follow the history of certain 'shared' phonemes or other features. Bloomfield has pointed out most of the following: (1) Proto-Algonquian *θ*, *l*, *n* are kept distinct in Cree; (2) *l* (coincidence of *θ* and *l*) is kept distinct from *n* in Shawnee, the Miami dialects, Penobscot, Delaware, and other eastern languages; (3) *n* (coincidence of *θ* and *l* and *n*) has lost all phonemic distinction but makes a morphophonemic distinction between original *n* and coincided *n* in Ojibwa, Fox, Menomini, and Potawatomi; (4) the original sequence nasal-stop is retained in Ojibwa and other central languages, and in Delaware and other eastern languages; (5) the nasal is dropped before stops in Potawatomi, Shawnee, Fox; (6) vowels in unstressed position are either reduced or dropped entirely in Ojibwa and Potawatomi; (7) the mechanical stress of proto-Algonquian remains in all of the Central languages, probably in most of the daughter languages; (8) phonemic stress is found in Delaware and Penobscot, probably in certain other eastern languages, possibly in western languages; (9) numerous inflectional features might be added to extend this list but one striking example must suffice: a general absence of prefixes to mark persons is shared by the Micmac of the east and the Arapaho dialects of the west (and the marginal use of personal prefixes is also similar in Micmac and Arapaho). What contradictions would result if we attempted to classify languages on the basis of these nine features alone, taking them at one chronological level! The point of all this is precisely that such features as these are not

<sup>12</sup> Siebert, 1940.

<sup>13</sup> Siebert, 1941.

to be taken at one chronological level. To begin at the beginning of our list, Cree remains most archaic, not as an entire language, but in respect to the single feature mentioned above, (1); Cree did not join in an innovation, (2), which affected not only Shawnee, Miami, Penobscot and Delaware, but also Ojibwa, Fox, Menomini, and Potawatomi; however when a further innovation of the same order took place (3), then neither Cree nor Shawnee, Miami, Penobscot, Delaware followed Ojibwa, Fox, Menomini, Potawatomi. The latter alone followed the ultimate innovation in this development (1 to 3, above). Innovations would presumably be shared by contiguous languages, and would not influence other groups of languages somewhat removed from the innovating area at the time of the innovation. It is not always possible to operate with innovations having such nice chronological strata as in the example just given. But even where the relative time of a shared feature is uncertain, innovations can still be assumed to affect contiguous languages. To be sure, subsequent linguistic movements may separate earlier neighbors. Thus, in discussing what we list as a shared feature (9, above), Siebert, in his review of Micmac, says, "The original home of the Arapaho-Atsina is known to have been further east (Minnesota) while the Micmac seem to have some connections with the northern Central Algonkian (Cree, etc.), whose early residence was certainly not far distant."<sup>14</sup>

In a paper attempting to make a critical summary of the results of a large field, it is necessary to stop at this point. Work of the future will possibly consider the relationship of known movements in historic times (see 5, above) with more or less temporary associations of neighbors (as linguistically reflected in 'shared' phonemic developments or isoglosses of languages or dialects). It would be a great pity if general statements warning workers of general dangers (implicit in all language-culture problems) were to inhibit specific work.

### ESKIMO AND ALGONQUIAN RELATIONSHIPS

Eskimo and Algonquian are genetically related, according to J. P. Harrington. There is a special criticism to be made of this unsupported conclusion; it is anachronistic. During the first century of exploration among American Indian languages, it was expectable and often stimulating to have scholars express their impressionistic conviction of relationship between far-flung languages or language families. This period of program writing came to an end with Sapir's great reduction which combined language families

<sup>14</sup> Siebert, 1940.

into six structural categories. One of these was reserved for Eskimo alone.

A few instances have been found of borrowing between Eskimo and Eastern rather than Central Algonquian languages. While the various Algonquian languages are bordered by a single Eskimo language, Central-Greenlandic, it is possible that the lexicons of the numerous Eskimo dialects will be none too homogeneous. Compilations of dictionaries as nearly comprehensive as possible for Algonquian languages are needed both by linguists and ethnographers. In order to bring to light unambiguous evidence (in addition to archaeological clues) of the past penetration of the Eskimo in the Northeast, it is necessary to have extensive dictionaries in both the dialects of Eskimo and the languages of Algonquian.

### BEOTHUK

Beothuk was classified as an independent language family rather than as an Algonquian language by Powell and Gatschet in 1885; Speck explains that this was because the materials for comparison were scanty and badly recorded. Is this to suggest that Beothuk may after all be quite Algonquian-like?

Speck also warns his readers against overestimating the peculiarity of the position of Beothuk. The peculiarity of an isolated language or language family should of course be minimized in the New World: even according to the most extreme reductions of language families, linguistic diversity remains more expectable or characteristic in America than in Europe. Yet compare the parallel linguistic situation in Spain and France (isolated Basque). No one denies that the position of Basque in Europe is peculiar; this is because Basque has neither living nor known extinct sister languages, and when occasional French or Spanish words are found in Basque they are regarded as loan words. Similarly, Beothuk is only a shade less peculiar in its position among Algonquian languages, if we are to assume no direct relationship with Algonquian.

So our essential question is whether or not we can assume that Beothuk is an Algonquian language. We assume that it is not: Beothuk either shows no resemblance to proto-Algonquian, as reconstructed; or shows resemblances to neighboring Algonquian languages which are all too close. The latter suggest borrowing. Thus, Speck received from his dubious Beothuk informant one word dubiously corroborated by other lexical sources for Beothuk. It is *bénam* 'woman,' probably a loan from Penobscot (*phénam* 'woman'); cp. the Peyton Beothuk vocabulary *emem-*, and the Patterson Beothuk vocabulary *enam*, both translated as 'woman.' The remaining words in the Speck vocabulary are not corroborated by other lexical sources.

Those cited by Howley are more extensive than Speck's; altogether some 500 Beothuk words are preserved.

Is it possible to assume that Beothuk had still earlier relationships with proto-Algonquian? It would no doubt be easier to operate with a Beothuk-Algonquian hypothesis than it would be to state the difference between proto-Algonquian and Beothuk as recent innovations of the latter. But even the better hypothesis is not in the least promising.

Besides considering Beothuk as borrowing from Algonquian, or perhaps distantly related to proto-Algonquian, a third and quite intriguing possibility presents itself. Perhaps Beothuk speakers were scattered along the north Atlantic coast before Algonquian tribes first intermingled with and then stimulated the Beothuk to remove to Newfoundland; in this process the Beothuk language may have acted as the donor, thus accounting for the lexical innovations of Eastern Algonquian. If this were so, our preceding example should be reversed: Penobscot *phénam* 'woman,' probably a loan from Beothuk (*bénam* 'woman'); contrast proto-Algonquian *exkweewa* 'woman.' Even if Beothuk were the chief donor, some borrowing might be the other way around. Compare proto-Algonquian *manetoowa* 'spirit' and Beothuk *mandee* which Howley gives to mean 'devil' (the usual Algonquian way of expressing 'devil' is by a compound meaning literally 'bad spirit,' with *manetoowa* as the second member).

The peculiarity of the Beothuk position rests on the assumption that the Beothuk language is not Algonquian in an otherwise Algonquian area. Whatever its pre-Algonquian history may have been, we must recognize in Beothuk an anomalous survivor of a past observable only in shadowy outline, as through a dark glass.

INDIANA UNIVERSITY  
BLOOMINGTON, INDIANA.

# SOME PSYCHOLOGICAL CHARACTERISTICS OF THE NORTHEASTERN INDIANS

A. I. HALLOWELL

**I**N THE history of anthropology the biological and cultural attributes of human populations considered in their group aspects have been the major focus of attention. The questions which anthropologists most frequently have set out to answer have been of the following kinds: What are the physical characteristics of the population of a given region? What languages are spoken? What are the beliefs and customs? What kind of artifacts are used? The data having been collected and described, comparisons have been made with human populations in other regions, or with an earlier population of the same region, in order to distinguish biological and cultural similarities or differences and to work out various kinds of relationships that would appear to exist. The essays in this volume deal essentially with such basic questions in Northeastern North America.

Questions of quite a different order arise if one approaches a human population as people; that is, as personalities in social interaction with one another. From this point of view such questions arise as: At what level of intelligence do these individuals function? What are the characteristic attitudes they display? What characteristic patterns of emotional expression are found? What are the personality traits exhibited by individuals? Which of these appear to be typical for the entire population? What is the range of idiosyncratic variation in personality?<sup>1</sup> More searching questions lead to an investigation of the conditions that have given rise to specific constellations of personality traits, and, in terms of the deeper layers of the personality, the kind of character structure that underlies the behavior of individuals.<sup>2</sup>

In short, the study of people as functioning personalities inevitably leads to a consideration of socio-psychological problems, central to which is the relation between personality organization and the cultural matrix in which it is formed. Instead of high-lighting the folkways, the mores, and institutions of a given population, and subordinating individuals as undifferentiated *bearers* of a culture, we accent human beings as differentiated personalities for whom the culture specifies the values of life, defines situations in a meaningful way, and provides patterns of social interaction for

<sup>1</sup> Kluckhohn and Mowrer, 1944.

<sup>2</sup> Kardiner, 1939.

achieving traditional goals. As Cottrell puts it, "In the spectrum of the social sciences, there is a dark spot between institutional studies of behavior and the 'impertinently realistic' studies of the clinics. In this area rests the key to the meaning of culture and society to individuals, which no amount of further theoretical refinement alone will reveal. This is the area which institutional studies shoot over and clinical studies shoot under, and the one which only a methodologically mature social psychology can actually hit."<sup>3</sup>

If we assume that there are intimate connections between personality and culture, it follows that individuals in societies with different cultural backgrounds will reflect this fact and that changes in culture will be accompanied by changes in personality organization.

So far as the Woodland Indians are concerned this latter point was demonstrated in an investigation I made of the Berens River Saulteaux. In that study,<sup>4</sup> which was based upon data obtained by the Rorschach method, a comparison was made between two groups of Indians with the same cultural background, and living on the same river, but acculturated to different degrees at the present time. While all these Indians when considered together exhibited tendencies towards the same basic type of character structure, it was found that the sample representing those who had come into closest contacts with whites departed significantly from the sample whose culture was most heavily weighted in the aboriginal direction.

The results of this investigation suggest a general inference. Since none of the Northeastern Indians have entirely escaped the impact of Western culture we cannot assume that their psychological characteristics, any more than their culture patterns, are equivalent to those of the aborigines who inhabited this area in the seventeenth century. We cannot expect the remnants of the Micmac living in the Maritime Provinces today to manifest the psychological characteristics of their forebears described by Biard, Le Clercq and Denys. Nor can we expect the highly acculturated Iroquois flourishing in New York State to exhibit the personality traits of those described by the Jesuits since, unlike the Algonkians among whom acculturation has been stimulated chiefly from without, the Iroquois were in addition subjected to the influence of their native reformer, Handsome Lake, and his followers.<sup>5</sup> On the other hand, Algonkian groups like the Montagnais-Naskapi and, farther west, the Cree and Saulteaux-Ojibwa-speaking peoples, who have remained culturally conservative even under modern conditions, might be expected to approximate in some respects the

<sup>3</sup> Cottrell, 1941, p. 49.

<sup>4</sup> Hallowell, 1942.

<sup>5</sup> Wolf, 1919.

psychological characteristics of their cogeners of earlier times. And since the Iroquois on the Six Nations Reserve in Ontario are not only very numerous, but retain certain aboriginal institutions, it is possible that a systematic investigation might expose some differences in personality organization if they were compared with the Iroquois of certain reservations in New York State. Whatever the answer may be to such questions, the fact remains that whereas we know a great deal about the culture of the Indians of the Northeast, we know very little about the Iroquois and Algonkians as people.

Since the native population of the entire Eastern Woodland area, as compared with other regions of North America, had a certain community of culture traits in aboriginal times we might expect the people of the Northeast to share *some* basic psychological features in common. On the other hand, the differences between Algonkian and Iroquois culture would imply some psychological differences. Such questions are too difficult, or perhaps impossible, to answer at this date, particularly in view of the fact that we have scarcely begun to inquire into the effects upon personality organization of various stages in acculturation. Original cultural differentials between Algonkian and Iroquois may of course have influenced the acculturation process itself and the Iroquois peoples, considered as individuals, may even today exhibit psychological characteristics that differentiate them from acculturated Ojibwa or Cree or Naskapi. But it is also possible that contacts with whites have tended to obliterate the older cultural background altogether, in so far as it might be an effective component in personality organization. It cannot be the purpose of this paper, therefore, to summarize what we *know* about the psychological characteristics of the Northeastern Indians but rather to emphasize the problems involved and to offer some tentative interpretations of the data at hand.

Instead of initiating our discussion with the living peoples who have all been influenced to a greater or less extent by contact with whites, I should like to raise the question whether it is possible to secure any data of psychological value from our earliest sources of information on the Northeastern Indians. Although this way of attacking the problem has never been systematically exploited, and I do not intend to do more than sample the possibilities here, these old sources do offer some interesting data for investigation. Besides, if any conclusions of positive value can be established, we shall then have a base line from which to chart later developments.

While the early missionaries, traders and explorers were neither trained anthropologists nor psychologists, they had one decided advantage over later investigators. They were able to observe the Indians under purely aboriginal conditions. Consequently, in building up a picture of native cul-

ture in the seventeenth and eighteenth centuries we have profited greatly by their observations. Is it not possible that their statements about the Indians as people also are worth considering? Missionaries and traders, we should remember, unlike modern anthropologists, were not primarily interested in the Indians as informants from whom a generalized picture of the culture was to be built up, nor as subjects in a sample of a population whose physical traits were to be measured. These early observers were forced to deal with the Indians much more as differentiated personalities. Part of their task was to obtain insight into the character of the Indians in order to devise ways and means for influencing them toward certain ends. It is not surprising, then, that the missionary, the trader and the explorer reflected upon what we would now call the psychological characteristics of the Indians. Consequently, we find statements here and there that refer to the character of particular individuals or to whole tribal groups. While many of these observations are crudely stated generalizations that lack the psychological sophistication to which we have become accustomed in the present century, nevertheless one often wishes that such remarks had received further elaboration and documentation.

Of course it is true that if one takes some of these generalizations at their face value, without evaluating the relation of the particular observer to the natives he was describing, all we may have is a prejudiced view. As Kinietz has said, "In considering all of their characterizations of the Indians, it should be borne in mind that most of the Europeans wanted something: the missionaries sought converts, the traders were after furs, and the military men wanted warriors. To those who got what they desired, the Indians were sensible, brave and upright people; but if the overtures of the Europeans were not favorably received, the tribe was composed of thieves, liars, dissemblers, and even traitors."<sup>6</sup> The margin of error involved can be controlled, however, in several ways: (1) In most cases we have the observations of more than one person, in which case we may have corroborative testimony by independent witnesses at our disposal; (2) we can ask ourselves whether the observations make psychological sense when put side by side with other remarks and with any concrete behavioral data cited; (3) we can evaluate the older observations in terms of our knowledge of contemporary peoples who are culturally the most conservative.

What I propose to do is to examine some of the early accounts of the Northeastern Indians in the light of our contemporary knowledge of the psychodynamics of human behavior to see whether the psychological char-

<sup>6</sup> Kinietz, 1940, p. 167.

acteristics depicted for an earlier period present an intelligible picture. The two major topics I have selected for discussion are (1) the general level of intelligence and (2) the emotional structure of the Indians.

### INTELLIGENCE LEVEL

In view of the heated debate in modern times about the differential mental capacities of the various races of Man, the almost complete unanimity with which seventeenth century observers equate the Indians with Europeans is striking. Apparently the idea never arose in the minds of those who had first-hand knowledge of them that the Indians were in any way mentally inferior to whites. Bressani, for example, who had been a missionary in Huronia from 1645 until 1649, and later wrote a general account of the New World natives,<sup>7</sup> points out that they "are hardly Barbarians, save in name. There is no occasion to think of them as half beasts, shaggy, black and hideous." He goes on to remark the acuteness of their senses and their tenacious memory. He is particularly impressed by their "marvellous faculty for remembering places, and for describing them to one another," for finding their way about and for recalling details that whites "could not rehearse without writing." Bressani even goes so far as to say that, "they have often persuaded us in affairs of importance, and made us change the resolution which, after mature deliberation, we had taken for the weal of the country. I doubt not that they are capable of the sciences. . . ."

Other Jesuits who, being intellectually trained men themselves, may be accepted as good common-sense judges of intellectual functioning, give similar reports. Du Peron<sup>8</sup> writes of the Huron and Ragueneau<sup>9</sup> corroborates him: "They nearly all show more intelligence in their business, speeches, courtesies, intercourse, tricks and subtleties, than do the shrewdest citizens and merchants in France." Jerome Lalemant writes, ". . . for I can say in truth that, as regards Intelligence, they are in no wise inferior to Europeans and to those who dwell in France. I would never have believed that, without instruction, nature could have supplied a most ready and vigorous eloquence, which I have admired in many Hurons; or more clear-sightedness in affairs, or a more discreet management in things to which they are accustomed."<sup>10</sup>

The Micmac were said by Le Clercq not only to "have naturally a sound mind and a common sense beyond that which is supposed in France,"<sup>11</sup> but "they conduct their affairs cleverly." The editor of Le Clercq remarks,

<sup>7</sup> Jesuit Relations (hereafter cited as J.R.), vol. 38, pp. 257 ff.

<sup>8</sup> J.R., vol. 15, p. 157 (1639).      <sup>9</sup> J.R., vol. 29, p. 281.

<sup>10</sup> J.R., vol. 28, p. 63 (1644-1645).      <sup>11</sup> Le Clercq, 1910, p. 241. Cf. J.R., vol. 3, p. 73.

"indeed they were able to outwit the French captains in trade, as Denys makes very plain," for which there is likewise evidence in Father Biard's account.

It is worth noting, too, that Father Le Jeune, that sage Jesuit, appears to have sensed the importance of training in relation to the full exercise of native capacities. For he observes that, "Those who cross over here from your France are almost all mistaken on one point,—they have a very low opinion of our Savages, thinking them dull and slow-witted; but as soon as they have associated with them they confess that only education, and not intelligence, is lacking in these peoples."<sup>12</sup> In another *Relation*, after remarking that the "mind of the Savages" is of good quality, he goes on to write, "Education and instruction alone are lacking . . . I naturally compare our Savages with certain villagers, because both are usually without education; though our Peasants are superior in this regard; and yet I have not seen any one thus far, of those who have come to this country, who does not confess and frankly admit that the Savages are more intelligent than our ordinary peasants."<sup>13</sup> Cadillac, referring to the Ottawa at Mackinac (1695) makes this general statement, "We may say without flattery, that all the Indians are naturally intelligent."<sup>14</sup>

These are extremely interesting appraisals and, so far as we know, as honest as could be desired. While other citations, supporting the high level of intelligence attributed to the Indians in their native state, could be given,<sup>15</sup> those referred to must suffice as an index of the general impression created upon the early observers.

Is this impression supported by the more refined methods and observational techniques we now have at our disposal? It is impossible to answer this question specifically for the Northeastern Indians since no attempt has ever been made to rate their level of intelligence in terms of the results of a systematic application of standard intelligence tests. When such studies have been made the same questions arise that have plagued all the investigators who have used such tests on other American Indians or native peoples on other continents. For example, a study was made of children of the Six Nations Reserve (Iroquois). They all spoke English, but on the whole their command of the language was not that of white children, a fact that adversely affected their scores in the verbal tests. In non-verbal tests they approximated white norms.<sup>16</sup> While test results, when taken at their face

<sup>12</sup> J.R., vol. 19, p. 39 (1640).      <sup>13</sup> J.R., vol. 6, p. 231.      <sup>14</sup> Kinietz, 1940, p. 232.

<sup>15</sup> Cf. Duncan Cameron (on the Saulteaux) in Masson, 1890, vol. 2, p. 248.

<sup>16</sup> Jamieson and Sandiford, 1928. See also Garth, 1931; Blackwood, 1927; Klineberg, 1935, chap. 8; Mann, 1940; Anastasi, 1937, chap. 7.

value, may show the subjects to be "retarded" in terms of the average I.Q., (the majority of I.Q.'s obtained from studies of Indians at large fall between 70 and 90)<sup>17</sup> sophisticated students are now aware that differences in language facility, schooling, speed in performance, motivation and other factors related to the cultural background of the subject, all affect the results. "Thus it would seem that intelligence tests," writes Anne Anastasi, "measure only the ability to succeed in our particular culture. Each culture, partly through the physical conditions of its environment and partly through social tradition, 'selects' certain activities as the most significant. These it encourages and stimulates; others it neglects or definitely suppresses. The relative standing of different cultural groups in 'intelligence' is a function of the traits included under the concept of intelligence, or, to state the same point differently, it is a function of the particular culture in which the test was constructed."<sup>18</sup> Consequently, until intra-cultural variables are properly weighed in inter-cultural comparisons, the results of intelligence tests may be highly misleading in the conclusions they suggest. Anastasi elaborates this point for primitive peoples: "Tests of abstract abilities, for example, are considered more diagnostic of 'intelligence' than those dealing with the manipulation of concrete objects or with the perception of spatial relationships. The aptitude for dealing with symbolic materials, especially of a verbal or numerical nature, is regarded as the acme of intellectual attainment. The 'primitive' man's skill in responding to very slight sensory cues, his talents in the construction of objects, or the powers of sustained attention and muscular control which he may display in his hunting behavior, are regarded as interesting anthropological curios which have, however, little or no intellectual worth. As a result, such activities have not usually been incorporated in intelligence scales but have been relegated to a relatively minor position in mental testing."<sup>19</sup>

The difference in the criteria used for evaluating superiority or inferiority of intelligence is strikingly brought out by the reports of the Indians' opinion of whites compared to themselves. They did not accept naïvely the white man's evaluation of himself as superior; actually, they considered themselves to be superior to whites. Europeans were sometimes perplexed by such an odd notion. Biard, for example, writes: "You will see these poor barbarians, notwithstanding their great lack of government, power, letters, art and riches, yet holding their heads so high that they greatly underrate us, regarding themselves as our superiors."<sup>20</sup> Peter Grant, referring to the

<sup>17</sup> See Klineberg, 1935, p. 153.

<sup>18</sup> Anastasi, 1937, p. 511.

<sup>19</sup> Anastasi, 1935, pp. 510-511.

<sup>20</sup> J.R., vol. 3, p. 73.

Saulteaux of a much later date, indicates quite clearly the nature of some of the criteria employed in judging the whites. After observing that, "Though they acknowledge the superiority of our arts and manufactures and their own incapacity to imitate us, yet, as a people, they think us far inferior to themselves." He adds, "They pity our want of skill in hunting and our incapacity for travelling through their immense forests without guides or food."<sup>21</sup> It is evident that the qualities of mind required for success in such pursuits are quite different from those exercised in abstract thinking or the manipulation of quantitative concepts.

The Standard Intelligence Tests, however, are not the only tool now at our disposal for gaining information about the intelligence level of non-literate peoples. While designed as a technique for arriving at a more inclusive picture of personality structure and functioning, Rorschach results permit judgments of general intelligence level that the expert, also familiar with intelligence tests, can translate into I.Q. points with a fair degree of accuracy. "Form level rating," as a means of arriving at a more precise appraisal of the intellectual functioning of the subject, has been recently discussed by Bruno Klopfer.<sup>22</sup> The advantage of this technique is that the subject's intellectual approach to things is evaluated as only one facet of the personality picture the Rorschach protocol reveals. This means that the *qualitative* aspects of intelligence can be judged in relation to the functioning of the personality as a whole and not as something abstracted from it. The range of the individual's intellectual aptitudes can be evaluated, for the test material itself is not weighted in any particular direction. Thus, it is possible to discern whether the subject shows capacities for intellectual functioning on an abstract or concrete level; how far either type of functioning predominates, and the quality of such functioning. When the group results from an adequate sample of a population are considered it is possible to see how far the intellectual functioning of an individual is typical of the general trend of the group. Furthermore, since verbal facility, speed and other factors that have complicated the interpretation of the results of intelligence tests among primitive peoples play quite a different role in the Rorschach, it can be used with very little difficulty among native peoples, and the results obtained are comparable with those obtained on white subjects.<sup>23</sup>

Although I have not yet fully completed my analysis of the Rorschach records of 102 adult Saulteaux and 49 children, the preliminary results, so

<sup>21</sup> Masson, 1890, vol. 2, p. 325.

<sup>22</sup> Klopfer, 1944.

<sup>23</sup> For further elaboration of these points see Hallowell, n.d.

far as general level of intelligence is concerned, are interesting to compare with the evaluation of the intelligence of the Northeastern Indians given by early observers, and the somewhat equivocal results obtained when Indians have been given intelligence tests. Of course, the contemporary Saulteaux cannot be fully equated with the Indians of the Northeast in the seventeenth century, yet there are basic cultural and linguistic connections and the inland Saulteaux of the Berens River still maintain today a modicum of their aboriginal life. Like the Indians of an earlier day the chief problems they have to solve are the practical ones that face them daily in order to make a living. There are no large ventures to be planned by anyone, nor has the individual any responsibilities that extend beyond the members of his family group. (Even a chief has very little more.) There was nothing in the aboriginal culture to stimulate abstract thinking and the very elementary schooling some individuals have received is not directed toward this end. Furthermore, there is nothing in the culture to call forth any imaginative powers of a highly creative sort. Myths and tales are *recounted*, not invented, and the same situation holds true for most of their music. The only art that seems to call out any inventiveness is beadwork. It is not strange to find, then, that the results of the Rorschach technique indicate that the intelligence of the Saulteaux functions at a concrete, practical, common-sense level and that their characteristic intellectual approach to things is very cautious and precise. Many of them add to this a capacity for observing acutely fine details that might escape other observers, but they show little interest in organizing such details into wholes with a significant meaning. The details are of interest for their own sake rather than as part of some larger pattern. Related to this concrete approach to things is the passive phantasy, a kind of idling imaginative activity, without boldness or genuine creativeness, which is also shown in the Rorschach protocols.

From this brief resumé we can readily see that the Saulteaux, on the average, could hardly be expected to rate as high as educated whites on any intelligence test which stressed a qualitatively different type of intellectual functioning. They are not an intellectual people; abstract concepts of the order of those developed in western culture are tools that are lacking for the development of their theoretical or artistic thinking. Saulteaux culture has encouraged intelligence to concentrate on such capacities as sharpness of perception and detailed memory. A few individuals do show tendencies toward more abstract and combinatorial thinking. One of these men is a conjurer whose personal history shows him to be ill-adapted to the practical exigencies that the life of a hunter and trapper demands. His Rorschach

record shows him to have superior intelligence and a genuine capacity for abstract thought. His lack of social adjustment may be due to the fact that he has found no adequate scope for the exercise of his abilities in Saulteaux society.

Turning again to the statements of the early observers, we see that their estimates of the intelligence of the Indians were based on some of the same intellectual qualities that emerge from the picture which the Rorschach presents of Saulteaux intelligence. They were highly appreciative of the "practical intelligence" of the Indian as evinced in judgment about everyday affairs, a detailed knowledge of place and events, and so on. It was probably for this reason, too, that the Indians were compared to the peasantry of Europe rather than to the educated classes. The comparison was an apt one, since it is not unlikely that the qualitative aspects of the intelligence of both groups is rooted in comparable modes of meeting the problems of life.

### EMOTIONAL STRUCTURE

The structure of the emotional life of human beings has proved to be of such major importance for an understanding of the foundations of personality development and functioning that I have sampled the statements of early observers for cues that provide some insight into the affective life of the Indians of the Northeast.

One thing which seems to have impressed all Europeans alike is what may be characterized as a multifaceted pattern of emotional restraint or inhibition. All observers do not document every aspect of this pattern but there is little doubt that it is all of a piece psychologically. One receives the impression that it probably applied quite generally to all the Woodland peoples, irrespective of tribal or linguistic affiliation, and that it reflects an important aspect of their personality organization.

The most familiar facet of this pattern of emotional restraint is the basis for the stereotype of the Indian as a stoical type of human being. He is pictured as displaying the greatest fortitude and patience in the face of all the vicissitudes of life—hunger and hardships of all kinds, disease, losses in gambling, torture, childbirth, and so on. Jouvency,<sup>24</sup> for example, in his general account of the Indians of Canada (1710) writes, "Whatever misfortune may befall them they never allow themselves to lose their calm composure of mind, in which they think that happiness especially consists. They endure many days fasting; also diseases and trials with the greatest cheerfulness and patience. Even the pangs of childbirth, although most bit-

<sup>24</sup> J.R., vol. 1, p. 277.

ter, are so concealed or conquered by the women that they do not even groan; and if a tear or a groan should escape any one of them, she would be stigmatized by everlasting disgrace, nor could she find a man thereafter who would marry her." (An exaggeration, no doubt, but the behavior expected of a woman is clearly indicated.) During the winter Le Jeune camped with the Montagnais some of them said to him: "We shall be sometimes two days, sometimes three, without eating, for lack of food; take courage, *chichiné*, let thy soul be strong to endure suffering and hardship; keep thyself from being sad, otherwise thou wilt be sick; see how we do not cease to laugh, although we have little to eat."<sup>25</sup> And later, generalizing, he says: "The Savages, although passionately fond of gambling, show themselves superior to our Europeans. They hardly ever evince either joy in winning or sadness in losing, playing with most remarkable external tranquillity,—as honorably as possible, never cheating one another."<sup>26</sup> On the Micmac Le Clercq makes similar observations: "They have the fortitude and the resolution to bear bravely the misfortunes which are usual and common to all men . . . They have patience enough in their sickness to put Christians to confusion . . ."<sup>27</sup>

So far as torture is concerned, the fortitude of those subjected to this torment is almost too well known to need documentation. Jouvency says, "The prisoner who has beheld and endured stake, knives and wounds with an unchanging countenance, who has not groaned, who with laughter and song has ridiculed his tormenters, is praised; for they think that to sing amid so many deaths is great and noble. So they themselves compose songs long beforehand, in order that they may repeat them if they should by chance be captured."<sup>28</sup>

A somewhat less celebrated aspect of the pattern of emotional restraint that seems to have characterized the Woodland Indians is the inhibition of any expression of anger in interpersonal relations. An amiable attitude was even maintained towards prisoners at the stake. According to the account of one eye-witness of the gruesome torture of an Iroquois captive by some Hurons,<sup>29</sup> "anger and rage did not appear upon the faces of those who were tormenting him, but rather gentleness and humanity, their words expressing only raillery or tokens of friendship and good will. There was no strife as to who should burn him—each one took his turn; thus they gave themselves leisure to meditate some new device to make him feel the fire more keenly." A cold-blooded affair, indeed, which the observer thought

<sup>25</sup> J.R., vol. 6, p. 231.

<sup>26</sup> J.R., vol. 16, p. 201.

<sup>27</sup> Le Clercq, 1910, p. 243.

<sup>28</sup> J.R., vol. 1, p. 273.

<sup>29</sup> J.R., vol. 13, p. 67 (1637).

increased the victim's suffering, but nevertheless noteworthy because of the absence of any expression of anger.

The emotional structure of the situation just referred to becomes more intelligible when we consider the larger pattern with which it is connected. The early observers frequently comment on the amiability and mildness exhibited in all face-to-face relations in so far as these were *in-group* relations. This is merely a corollary of the fact that any overt expression of anger was characteristically inhibited. Of course, this impressed the missionaries in particular since it approximated a Christian ideal. Jouvency goes so far as to say that "they (the Indians) know nothing of anger,"<sup>30</sup> and Bruyas<sup>31</sup> writing from the Oneida Mission observes, "I have never seen them become angry, even on occasions when our frenchmen would have uttered a hundred oaths." Le Jeune, speaking in particular of the Montagnais, phrases the matter with greater psychological subtlety. He says, "They make a pretence of never getting angry, not because of the beauty of this virtue, for which they have not even a name, but for their own contentment and happiness; I mean, to avoid the bitterness caused by anger. The Sorcerer said to me one day, speaking of one of our Frenchmen, 'He has no sense, he gets angry; as for me, nothing can disturb me; let hunger oppress me, let my nearest relation pass to the other life, let the Hiroquois, our enemies, massacre our people, I never get angry.' What he says is not an article of faith; for, as he is more haughty than any other Savage, so I have seen him oftener out of humor than any of them; it is true also that he often restrains and governs himself by force, especially when I expose his foolishness."<sup>32</sup>

This last statement leads us directly to another facet of the pattern since in dealing with such matters we must always take account of interpersonal relations. Le Jeune used to argue with the sorcerer about native beliefs in a provocative manner and evidently the old man did his best to hold his temper. But Le Jeune in this situation, as is clear from other evidence, was not following the Indian pattern. For the pattern of emotional restraint not only implies that the individual restrain his *own* anger, it also requires that he suppress open criticism of his fellows in face-to-face relations and avoid disputation of a personal kind in order to avoid arousing *their* anger. This is why Jouvency remarks that at first the Indians "were greatly surprised when the Fathers censured their faults before the assembly: they thought

<sup>30</sup> J.R., vol. 1, p. 275.      <sup>31</sup> J.R., vol. 51, p. 129 (1666-68).

<sup>32</sup> J.R., vol. 6, p. 231. Le Clercq, 1910, p. 242, phrases a parallel statement in a manner which may indicate that he had Le Jeune's Relation of 1634 at hand. (See editor's remarks.) But he undoubtedly intended the observation to apply to the Micmac.

that the Fathers were madmen, because among peaceful hearers and friends they displayed such vehemence . . . ." Later he goes on to say that "friends never indulge in complaint or expostulation to friends, wives to their husbands, or husbands to their wives."<sup>33</sup> In other words, individuals avoid arousing emotions of displeasure or anger in others by the suppression of verbal criticism in face-to-face situations.

All of this fits in with the reputed independence and individualism of the Indians, with the absence of much, if any, real political authority vested in so-called chiefs or leaders. Writing of the Micmac Le Clercq says: "In a word, they hold it as a maxim that each one is free: that one can do whatever he wishes: and that it is not sensible to put constraint upon men. It is necessary, they say, to live without annoyance and disquiet, to be content with that which one has, and to endure with constancy the misfortunes of nature, because the sun, or he who has made and governs all, orders it thus."<sup>34</sup> For the Delaware we have the statement of Loskiel that a *chief* "dare not venture to command, compel, or punish anyone, as in that case he would immediately be forsaken by the whole tribe. Every word that looks like a command is immediately rejected with contempt by an Indian, proud of his liberty. The chief must endeavour to rule over his people merely by calm reasoning and friendly exhortation."<sup>35</sup> Zeisberger making the same point says: "They may not be prevailed on in any matter that does not please them, much less forced. If they cannot be persuaded with gentle words, further effort is in vain."<sup>36</sup> Even among the Huron, according to Baron de Lahontan, the leaders had no more power. Speaking through Adaric, the Huron chief, he remarks that "our Generals and Presidents of the Council have not more Power than any other Huron; that Detraction and Quarrelling were never heard among us; and in fine, that everyone is his own Master, and does what he pleases, without being accountable to another, or censur'd by his Neighbour."<sup>37</sup> In short, no one was in a position to order anyone else around. Tailhan, in an editorial footnote to Nicholas Perrot's elaboration of this same point ("the savage does not know what it is to obey . . . ") extends the generalization to all "the savages of New France."<sup>38</sup> How even the semblance of what to us would be a very trivial kind of social pressure was avoided is illustrated by an anecdote related by Father Laure. Once he was descending the Saguenay River by night in a canoe. He had two Montagnais with him and when they both dropped off

<sup>33</sup> J.R., vol. 1, pp. 275, 277.

<sup>34</sup> Le Clercq, 1910, p. 243.

<sup>35</sup> Loskiel, 1794, Part I, p. 132.

<sup>36</sup> Zeisberger, 1910, p. 90.

<sup>37</sup> Lahontan, 1905, vol. 2, p. 579.

<sup>38</sup> Blair, 1911, vol. 1, p. 145.

to sleep the father continued paddling. "Some time afterward, one of my men awoke, and took his paddle; and, as it is the custom of the Savages, who are exceedingly independent among themselves, never to say anything to one another about work, for fear of giving offense, he begged me to rouse the other."<sup>39</sup>

This suppression of any impulse to tell someone else what to do if viewed as a generalized pattern of interpersonal relations partly accounts for the reputed lack of restraint exercised by parents upon their children. Le Clercq says that the Micmac "never contradict anyone, and that they let everyone do as he pleases, even to the extent that the fathers and the mothers do not dare correct their children, but permit their misbehavior for fear of vexing them by chastising them."<sup>40</sup> Jouvency comments on this same fact immediately following his reference to the restraint exercised between spouses and between friends: "They treat their children with wonderful affection, but they preserve no discipline, for they neither themselves correct them nor allow others to do so. Hence the impudence and savageness of the boys, which, after they have reached a vigorous age, breaks forth in all sorts of wickedness."<sup>41</sup>

These statements must be taken in a purely relative sense unless methods of child care observed among contemporary Indians are a revolutionary departure from those of aboriginal days. What early observers probably had in mind, although they did not say so, was the absence of the kind of *corporal* punishment known to Europeans. A more balanced statement is found in a passage of the Relation of 1656-57. Dablon, referring primarily to the Onondaga whom he knew best says: "There is nothing for which these people have a greater horror than restraint. The very children cannot endure it, and live as they please in the houses of their parents, without fear of reprimand or of chastisement." But he also observes that they are sometimes punished "by having their lips and their tongues rubbed with a very bitter root." With reference to the general pattern we have been describing it is of psychological interest that Dablon says this punishment is seldom administered for "fear that vexation might lead the children to cause their own death by eating certain noxious plants." In other words, parents are said to avoid certain disciplinary measures because their children may resent it and take retaliatory measures. Fenton in his study of Iroquois suicide<sup>42</sup> records only five cases in which the alleged motivation was rebellion against parental restraint, so that actually child suicide was scarcely a

<sup>39</sup> J.R., vol. 68, p. 35.

<sup>40</sup> Le Clercq, 1910, p. 242.

<sup>41</sup> J.R., vol. 43, p. 271.

<sup>42</sup> Fenton, 1941.

serious social problem among the Iroquois. What is psychologically significant is the anxiety-laden attitude of parents toward severe disciplinary measures and its persistence down to the present day. For Fenton says that even the modern Seneca have a stock excuse for not disciplining their children too much. They say that children might grow up to mistreat their parents! The anxiety that such a rationalization reveals points to the operation of the same underlying psychological pattern that we have been discussing. This pattern has its roots in the demand that individuals learn to suppress overt expression of aggression in interpersonal relations of all kinds. When any impulses which can be so interpreted are expressed, retaliation in some form is expected. This expectation, in turn, arouses anxiety. Thus the only way to avoid anxiety is to restrain *oneself* and to comply with the demands of others. The Iroquois seem to have been more self-conscious of the pattern as applied to the relations of parents and children than was the case in Algonkian groups.

Still another facet of the basic pattern we have described was the reluctance on the part of the Indians to refuse a favor outright. That is, they maintained a surface amiability in this respect, even though they did not wish to do what was asked. Biard, referring to the Micmac, says that "no one would dare refuse the request of another . . ."<sup>43</sup> (But he gives a very neat instance of how some Indians avoided sharing *too much* on one occasion.) Peter Grant, writing of the Saulteaux, states the matter more fully: "Such is their notion of politeness that they seldom give a square refusal to any favor that is required from them; should they not be inclined to oblige, they know perfectly well how to give a plausible reason for their refusal."<sup>44</sup> Here again we can discern the obverse of the expression of displeasure, that is, a desire, motivated by anxiety, to avoid arousing displeasure or anger in others.

The same motivation undoubtedly was involved in what often seemed to be an intellectual assent to the teachings of the missionaries, when in fact this was not the case. Le Clercq<sup>45</sup> remarks that the Micmac "never contradict anyone." For the Montagnais we have the same observation recorded: Le Jeune says<sup>46</sup> "The Savages agree very readily with what you say, but do not, for all that, cease to act upon their own ideas," while Le Caron describing the people at Tadoussac, P.Q., remarks<sup>47</sup> that one of the obstacles to their conversion "is the opinion they have that you must never contradict anyone, and that everyone must be left to his own way of thinking. They

<sup>43</sup> J.R., vol. 3, p. 95.      <sup>44</sup> Masson, 1890, vol. 2, p. 327.

<sup>45</sup> Le Clercq, 1910, p. 242.      <sup>46</sup> J.R., vol. 5, p. 151.

<sup>47</sup> Quoted by Le Clercq, 1881, vol. 1, p. 222.

will believe all you please, or, at least will not contradict you, and they will let you, too, believe what you will." All this was extremely disconcerting to the Jesuits as Jouvency points out. "From the same desire for harmony," he says, "comes their ready assent to whatever one teaches them, nevertheless they hold tenaciously to their native beliefs or superstition, and on that account are the more difficult to instruct. For what can one do with those who in word give agreement and assent to everything, but in reality give none . . . ?"<sup>48</sup> Undoubtedly this explains why the Indians sometimes were accused of deceit and dissimulation.

It can now readily be seen that with their emotions strongly weighted on the side of restraint not only in enduring the fortuitous circumstances of life, but in all the daily face-to-face relations with others that inevitably must have aroused emotions of annoyance, anger, or a desire to criticize or correct, all of which had to be suppressed for fear of arousing resentment in others, that individuals must have developed an extreme sensitivity to overtones of anger or the overt expression of it. The whole psychological picture is one that suggests a suffusion in anxiety—anxiety lest one fail to maintain the standard of fortitude required no matter what the hardship one must endure; anxiety lest one give way to one's own hostile impulses; anxiety lest one provoke resentment or anger in others. As Willoughby says,<sup>49</sup> "In the field of the aggressive impulses, there is little anxiety in groups accustomed to settling differences immediately and definitely, as by a passing exchange of blows; it arises most characteristically in individuals over-trained to a standard of forbearance which makes any expression of resentment impossible." No wonder then that the Indians were taken aback by the openly expressed criticism of the Jesuits referred to by Jouvency, and no wonder that Le Jeune reports that only on one occasion did he hear an Indian say, "I am angry," and he adds that this man only said it once. "But I noticed," says Le Jeune, "that they kept their eyes on him, for when these Barbarians are angry, they are dangerous and unrestrained."<sup>50</sup> This is precisely what one would expect; it is the true psychological explanation of the apprehension felt both by the individual and his fellows. The suppression of all semblance of anger can be accompanied by a surface amiability in interpersonal relations, but at the same time open expressions of aggressive impulses become so markedly accented in this sort of affective balance that they become the symbols of the most violent intentions.

Of course, open fights and quarrels did sometimes occur, but it is interest-

<sup>48</sup> J.R., vol. 1, p. 275.

<sup>49</sup> Cf. Willoughby, R. R., 1935, p. 504.

<sup>50</sup> J.R., vol. 6, p. 231.

ing to note that after mentioning these Biard<sup>51</sup> says they were usually adjusted easily. He then goes on to picture the same amity described by other observers: ". . . we have never seen anything except always great respect and love among them, which was a great grief to us when we turned our eyes upon our own shortcomings. For to see an assembly of French people without reproaches, slights, envy, and quarrels with each other, is as difficult as to see the sea without waves, except in Monasteries and Convents where grace triumphs over nature."

Assuming the actual operation of the characteristic pattern of emotional inhibition described, we can be quite sure that the affects generated in daily social life presented a genuine problem to the individual. How was he to deal with the emotions he experienced but could not always spontaneously express?

One procedure would be to maintain a certain emotional indifference to things, to avoid investing too much emotion in anything, and when deep feelings were aroused to put them consciously aside as quickly as possible. This attitude is well expressed by the sorcerer to Le Jeune. Perhaps it was a factor in the so-called haughtiness of the Indian. It represents an extension of the idea of fortitude to all aspects of the affective life. The whole philosophy of this manner of dealing with the emotions is beautifully expressed in a passage of Le Clercq: "If some one among them laments, grieves, or is angry, this is the only reasoning with which they console him. 'Tell me, my brother, wilt thou always weep? Wilt thou always be angry? Wilt thou come nevermore to the dances and the feasts of the Gaspesians? Wilt thou die, indeed, in weeping and in the anger in which thou are at present?' If he who laments and grieves answers him no, and says that after some days he will recover his good humor and his usual amiability,—'Well, my brother,' will be said to him, 'thou hast no sense; since thou hast no intention to weep nor to be angry always, why dost thou not commence immediately to banish all bitterness from thy heart, and rejoice thyself with thy fellow-countrymen?' This is enough to restore his usual repose and tranquillity to the most affected of our Gaspesians. In a word, *they rely upon liking nothing, and upon not becoming attached to the goods of the earth, in order not to be grieved or sad when they lose them . . .*" (Italics ours).<sup>52</sup> Applied to one's relations with people such a philosophy would preclude any development of profound emotional ties.

If emotion could not be successfully handled by a stern indifference, and,

<sup>51</sup> J.R., vol. 3, p. 93 (Micmac).

<sup>52</sup> L Clercq, 1910, p. 243.

particularly in cases of anger, face-to-face encounters were precluded, the individual had to discharge his affect in some less direct fashion. Jouvency clearly describes what happened. "If any person has injured another by means of a rude jest (for they are commonly very talkative and are ready jesters) the latter carefully conceals it, or lays it up, and in retaliation injures his detractor behind his back."<sup>53</sup> In other words, the affect generated in such cases might be nursed and turned into a deep and burning resentment. This is one possible result of so deeply anchored and ramified a pattern of emotional restraint. The individual was compelled to be devious instead of direct and spontaneous. No wonder, then, that the Indians were sometimes characterized as incalculable, as "naturally fickle, mockers, slanderers and dissimulators,"<sup>54</sup> and why humorous sallies and often nicknames took the form of semidisguised attacks upon other persons. Biard, for example, says of the Micmac, ". . . they are droll fellows, and have a word and a nickname very readily at command, if they think they have any occasion to look down upon us."<sup>55</sup> Humor was one way of combining an amiable exterior with the necessity of expressing one's actual feelings. Besides, anything and everything that provoked laughter was thoroughly approved. Mirth seems to have been one expression of emotion that was relatively unrestrained. It provided a healthy psychological balance to all the other inhibitions demanded. Yet even laughter, as I have observed it, is muted among these people rather than boisterous.

Le Jeune gives the most vivid picture presented by any observer of the interplay of surface amiability and laughter combined with covert slander. While Le Jeune is referring to the Montagnais in particular, his remarks fit the general pattern analyzed so well that I believe his statement lends itself to a wider generalization. "I do not believe that there is a nation under heaven more given to sneering and bantering than that of the Montagnais," he writes. "Their life is passed in eating, laughing, and making sport of each other, and of all the people they know. There is nothing serious about them, except occasionally when they make a pretense among us of being grave and dignified; but among themselves they are real buffoons and genuine children, who ask nothing only to laugh . . ."<sup>56</sup> "The Savages are slanderous beyond all belief; I say, also among themselves, for they do not even spare their nearest relations, and with it all they are deceitful. For, if one speaks ill of another, they all jeer with loud laughter; if the other appears upon the scene, the first one will show him as much affection and treat him with as

<sup>53</sup> J.R., vol. 1, p. 277.

<sup>54</sup> Le Clercq (Micmac), 1910, p. 252.

<sup>55</sup> J.R., vol. 3, p. 75 (1616).

<sup>56</sup> J.R., vol. 6, p. 243.

much love, as if he had elevated him to the third heaven by his praise.”<sup>57</sup> One day Le Jeune was left alone in the wigwam with the women after the hunters had departed. The women, unaware that he could understand what they were saying, began talking about a certain man who had failed to carry anything home to his wife from a feast he had attended. The women, says Le Jeune, “spoke aloud and freely, tearing this poor apostate to pieces . . . ‘Oh, the glutton,’ they said, ‘who gives his wife nothing to eat. If he could only kill something! He has no sense; he eats everything like a dog.’” While all this was going on the man suddenly appeared and, says Le Jeune, “they knew very well how to put a good face on the matter, showing countenances as smiling as usual, even to such an extent that the one who had said the worst things about him gave him a bit of tobacco, which was then a great present.”<sup>58</sup>

Le Jeune goes on at this point to remark that “they are not troubled even if they are told that others are making sport of them, or have injured their reputation,” because he believes “that their slanders and derisions do not come from malicious hearts or from infected mouths, but from a mind which says what it thinks in order to give itself free scope, and which seeks gratification from everything, even from slander and mockery.” This interpretation does not coincide with that of other observers, for instance Raudot<sup>59</sup> who, referring to the Indians in general, says, “They are very polite and patient when one insults them, but they retain their resentment and do not lose any occasion to get vengeance.” But it will be noted that Le Jeune himself stresses the fact that this raillery takes place behind a person’s back and he says the Indians are “deceitful.” Furthermore, he says that “at the first opportunity they will pay their slanderer in the same coin, returning him the like.” It is to be presumed that this retaliation will also not be in a face-to-face situation. So we are bound to suspect that there is a more genuine aggressive component in all this raillery than Le Jeune says. He must have given considerable thought to this matter because in a later Relation (1637)<sup>60</sup> he comes to the conclusion that there is a very real undercurrent of hostility involved despite all the surface amiability. “It is strange,” he writes, “to see how these people agree so well outwardly, and how they hate each other within. They do not often get angry and fight with one another, but in the depths of their hearts they intend a great deal of harm. I do not understand how this can be consistent with the kindness and assistance they offer one another.” This is an extremely astute psychological observation, thoroughly realistic and entirely consistent with the emotional structure I

<sup>57</sup> *Ibid.*, p. 247.      <sup>58</sup> J.R., vol. 7, p. 175.

<sup>59</sup> Letter 25, p. 344, in Kinetz, 1940.      <sup>60</sup> J.R., vol. 12, p. 13.

have tried to sketch. It highlights the psychological effects of suppressed affects and suggests that verbal raillery by no means disposed of all the animosity generated. It also suggests that the reputed indifference referred to by Le Jeune himself was not altogether genuine in all cases. Much undischarged hostility probably remained. In fact, Le Jeune himself in one of his early Relations (1632) had written: "So enraged are they against everyone who does them an injury, that they eat the lice and other vermin that they find upon themselves—not because they like them, but only, they say, to avenge themselves and to eat those that eat them."<sup>61</sup> This remark is appended at the end of a description of the cruelty and torture meted out to enemies. In another place he again refers to this vindictiveness toward enemies<sup>62</sup> and says the women even surpass the men in this respect.

In connection with retaliation it may be recalled that there was a highly institutionalized means of *covert* aggression at the disposal of the Indians. This was sorcery. I have discussed its connection with the suppression of overt aggression among the Saulteaux in another paper. So far as the Montagnais are concerned, Le Jeune himself remarks<sup>63</sup> that belief in sorcery was so prevalent among them that "I hardly ever see any of them die who does not think he has been bewitched." This is sufficient evidence that from the standpoint of the Indians retaliation by this covert means was a stark reality. From a psychological point of view, of course, it can be said that this belief was supported by a large component of projection. Slander, backbiting, humor and witchcraft among the Indians all give evidence of the actual discharge of aggressively motivated affects that sought these indirect outlets because direct ones were not culturally approved. Because these other channels were approved the character traits of the Indians are found to be consistent with them. It could hardly be otherwise in view of what we know about the interplay of culture and personality.

Additional evidence is supplied by the data we have on what happened when the Indians got drunk. Liquor was supplied them from the beginning of their contact with Europeans and so even the earliest sources comment on how it affected them. Le Clercq was among the first to protest against its use in the fur trade because of its demoralizing effects.<sup>64</sup>

Alcohol, as we know, often releases inhibitions so that impulses are revealed which usually are kept in check when the individual is sober. Since there also appears to be a connection between personality organization, culture pattern and behavior under the influence of alcohol,<sup>65</sup> the conduct of

<sup>61</sup> J.R., vol. 5, p. 31.

<sup>62</sup> J.R., vol. 6, p. 245.

<sup>63</sup> J.R., vol. 12, p. 7.

<sup>64</sup> For references to the sources and a general discussion see Bailey, A. G., 1937, Chap. 6.

<sup>65</sup> Cf. Bunzel, 1940.

the Indian when drunk was, in a sense, a natural experiment, a cue to his character.<sup>66</sup> If his basic emotional structure was one that led to the suppression of a great deal of affect, in particular aggressive impulses, then we would expect that these might be released in a notably violent form under the influence of alcohol. This seems to have been what happened. In fact, it is a commonplace that the Indians became exceedingly dangerous when drunk so that Europeans stood in great fear of them and traders who used alcohol in the fur trade barred the gates of their forts when the Indians were in their cups. MacKay says that "Precautions for the defense of themselves and the Company property were the only positive reactions of the English to the bestiality and murderous fury roused in the Indians by alcohol. The exclusion of Indians from the stockaded enclosures of the forts and the conduct of trading through a small wicket were practices which survived many years and arose from the necessity of protection from drunken natives."<sup>67</sup>

Here we are more concerned with the possible direction of aggression toward in-group, rather than out-group, members. No better testimony is available than a statement on this point by Le Clercq: "Injuries, quarrels, homicides, murders, parricides are to this day the sad consequences of the trade in brandy; and one sees with grief Indians dying in their drunkenness: strangling themselves: the brother cutting the throat of the sister: the husband breaking the head of his wife: a mother throwing her child into the fire or the river: and fathers cruelly choking little innocent children whom they cherish and love as much as, and more than, themselves when they are not deprived of their reason. They consider it sport to break and shatter everything in the wigwams, and to brawl for hours together, repeating always the same word. They beat themselves and tear themselves to pieces, something which happens never, or at least very rarely, when they are sober. The French themselves are not exempt from the drunken fury of these barbarians, who, through a manifestation of the anger of God justly irritated against a conduct so little Christian, sometimes rob, ravage, and burn the French houses and stores, and very often descend to the saddest extremes."<sup>68</sup>

The homicidal aspect of drunken behavior becomes still more significant

<sup>66</sup> For an analysis of the interrelated psychological and cultural variables that characterize several distinctive patterns of drinking behavior in a sample of 77 societies see the significant pioneer work of Horton (1943). The author cites eight widely scattered societies in which the basic configuration contains elements similar to those found among the northeastern Woodland Indians, pp. 296 ff.

<sup>67</sup> MacKay, 1936, p. 220.

<sup>68</sup> Le Clercq, 1910, p. 255. For 19th century Ojibway parallels see, for example, Gilfillan, 1901; Peter Jones, p. 167; Tanner, 1830, pp. 163-165.

when we recall that however implacable and cruel the Indian may have proved as a foe, in-group behavior was not only amicable, but, by and large, it was characterized by a remarkable absence of murder. This, of course, is a corollary to what has already been said. Thus, while individuals, projecting their own aggressive phantasies, often believed that they were the victims of witchcraft, in actual fact physical violence among in-group members was a rarity. Drunkenness, however, leading as it did to release from the pattern of emotional restraint, permitted the discharge of suppressed hostility in the form of overt physical aggression which in the sober state was inhibited and overlaid by an effective façade of amiability. Although he refers specifically to the Saulteaux of Ontario in the early nineteenth century, Duncan Cameron expresses the point I have been emphasizing with such precision that his statement lends itself to wider generalization. "When sober," he says, "they are of very gentle and amiable disposition towards their friends, but as implacable in their enmity, their revenge being complete only by the entire destruction of those against whom they have a spite. They very seldom take that revenge when sober, as few people disguise their minds with more art than they do, but, when in the least inebriate all they have in their mind is revealed and the most bloody revenge taken."<sup>69</sup>

Duncan Cameron's statement that "few people disguise their minds with more art than they do," epitomizes to a large extent the impression which the Indian pattern of emotional restraint must have made on many white observers. Emotional expression provides the most direct cues to the inner life of other human beings and when the spontaneous play of emotion is concealed we are deprived of one of our chief guides to an understanding of others. Since the data assembled point very clearly to the fact that the emotional structure of the Indian was such that a great deal of emotional expression familiar to whites was inhibited, naturally it would appear to white observers that it was a matter of artful disguise rather than an integral part of the personality of the Indians. Their "persona" did seem to offer evidence of concealment, dissimulation, lack of candor and deceit. In psychological terms, this inhibitory pattern suggests the characteristics of a defense mechanism against anxieties. And the inference would be that, since the manifestations of this psychic mechanism are typified in the behavior of groups of individuals the determining factors must lie in the culturally constituted world in which these individuals live. If this is true, and I believe it is, the emotional structure attributed to the Indians of the

<sup>69</sup> Masson, 1890, fol. 2, p. 248; also the statement of Edwin James, the editor of Tanner, 1830, p. 337.

seventeenth and early eighteenth centuries should have persisted into later periods in so far as the cultural conditions that gave rise to it were not reconstituted through acculturation processes.

Evidence of the actual persistence of the old pattern is attested by the essential similarity between the psychological characterization reconstructed from the early sources and that written by Schoolcraft in the nineteenth century which, to a large extent, was based upon first-hand knowledge of the Indians of the Woodlands. Schoolcraft's characterization is also interesting because he phrases part of it with reference to certain conditions that he believes to be of determinative significance. These conditions, moreover, are those which are anxiety-provoking. "What are the facts that the Indian mind has had to guard against?" he inquires. "Physical suffering of the intensest character! This has made him to exhibit the most hardened and stoical qualities. Sometimes deception of a deep dye. This made him eminently suspicious of everyone and everything, even things without life; for, being a believer in necromancy and witchcraft, he has had to suspect all forms of life and matter. It became a prime object, in all classes, to suppress the exhibition of the feeling of nervousness, susceptibility, and emotion. He was originally eminently a man of concealments. He always anticipated harm, never good. Fear and suspicion put double guards upon him. A look or a word might betray him, and he therefore often had not a look or a word to bestow. This severe mental discipline made him a stoic of the highest character to his enemies, and to all whom he had reason to fear or suspect. It is the aged, the sedate, the experienced, to whom these traits peculiarly apply. If such men are dignified and reserved before strangers and councils, it is the dignity of Indian philosophy. No wonder the French missionaries and officers of the crown admired such a man, and made strong efforts to convert him, and transmitted enthusiastic reports of him to the Court of France. Imperturbability, in all situations, is one of the most striking and general traits of the Indian character. To steel his muscles to resist the expression of all emotion, seems to be the point of attainment; and this is particularly observed on public occasions. Neither fear nor joy are permitted to break this trained equanimity. The newest and most ingenious contrivance placed before him, is not allowed to produce the least expression of wonder. And, although his language has provided him with many exclamations of surprise, he cannot, when placed in the gaze of public observation, be induced to utter any, even the slightest of them, to mark emotion. The mind and nerves are schooled to this from the earliest hours, and it is deemed to be a mark of timidity or cowardice to permit his countenance to denote surprise." Even among relatives, "it is not customary to indulge in

warm greetings. The pride and stoicism of the hunter and warrior forbid it. The pride of the wife, who has been made the creature of rough endurance, also forbids it."<sup>70</sup>

While it is true that this characterization of Schoolcraft's is discerning enough on the descriptive level, and while he does hint at links between emotional restraint and the culturally constituted world of the Indian (e.g., the suspicion and anxiety aroused by sorcery), nevertheless, his statement is marred by over-generalization. For, to Schoolcraft, this "stern discipline of the mind and nerves," as he called it, was typical of the Indians as a whole, in South America as well as North America. This, of course, is not the case; the "stoical stereotype" is not applicable to the Indians as a race.<sup>71</sup> As a matter of fact, Schoolcraft himself was most familiar, by marriage and experience, with the Indians of the Eastern Woodlands. This fact enhances his character portrait of the Indians of this area while weakening it as a racial portrait of the Indian at large.

The same emotional structure remains characteristic of some of the Indians of the Eastern Woodlands at the present time. My own observations of the Berens River Saulteaux and the Rorschach records that I obtained from them corroborate the older descriptions. Among the less acculturated Indians of the upper reaches of the river in particular, the emotional structure to be observed is almost identical with that of the Northeastern Indians of an earlier period. Furthermore the connection between this psychological pattern and the cultural conditions of which it is a function are fairly clear.

There are no parallels, of course, to some of the conditions which existed in earlier centuries. The modern Saulteaux have no tradition of the warpath, nor any experience of native war or torture. Native games have completely disappeared so that we have no direct knowledge of how individuals acted when gambling. Yet the hardiness which women display in childbirth conforms to the traditional pattern. And since the Saulteaux still depend mainly upon hunting and fishing for a living, hunger and the hardships accompanying a low standard of living must be faced. Chief Berens has commented more than once that Indians, as compared to whites, do not mind going hungry. They do not worry about it, in fact they continue to laugh and joke even when hunger is gnawing at their vitals. I believe that this attitude is typical, but I also believe that we must interpret it as an excellent defense against the real anxiety which the threat of hunger, or the experience of it, actually imposes upon the Saulteaux. As a matter of fact, the latent anxiety aroused is much more serious than is apparent and for

<sup>70</sup> Schoolcraft, 1851-57, Part III, p. 58.

<sup>71</sup> Klineberg, 1935, p. 280.

this reason requires more suppression or emotional displacement than is obvious on the surface. What I have in mind is the belief among the Saulteaux that one may fail to find animals because some sorcerer is exerting a malevolent influence, or because one has offended the "masters" of the game animals or fish. In other words, according to native theory one *should* be able to make a living unless something goes wrong, and, if something does go wrong, it is *somebody's* fault. Since the aboriginal background of belief largely persists, it can only be concluded that fortitude in the face of hunger and hardship is a defense against latent anxiety derived from this source as well as from the objective conditions imposed by a food gathering economy.

Illness among the present-day Saulteaux is also met with great patience, and this thoroughly coincides with what is reported for the Indians of earlier centuries. But here, again, while some anxiety naturally is intrinsic to such situations, there is a distinctive psychological attitude to be noted which is a function of the prevailing beliefs about the causes of sickness. Any kind of serious illness is a consequence of wrong-doing on the part of some individual or the result of sorcery.<sup>72</sup>

So far as interpersonal relations go, there is a great deal of restraint among the Saulteaux upon the expression in public of all categories of emotion—joy, irritation, anger, etc. The most outstanding exception is laughter. In fact, the very positive emphasis upon the expression of laughter, in contrast to the inhibitions imposed upon the expression of other forms of emotion is highly characteristic. What Gilfillan says about the Minnesota Ojibwa of the nineteenth century completely accords with my observation among the Manitoba Saulteaux in the twentieth century. "There is continual laughter, and jests flying all round the wigwam from the time they wake in the morning till the last one goes to sleep. As long as they have anything to eat, and if no one is very sick, they are as cheerful and happy as can be. The laughter and droll remarks pass from one to the other, a continual fusillade all round. The old woman says something funny; the children take it up, and laugh at it; all the others repeat it, each with some embellishment, or adding some ludicrous feature, and thus there is continual merriment all day and all evening long."<sup>73</sup> Consequently anyone, Indian or white, who can tickle the risibilities of the Saulteaux is socially popular. The psychological importance of laughter among them is also evidenced by the institutionalization of humor. Despite the fact that their myths are sacred stories, many of them are characterized by a Rabelaisian humor, that never fails to provoke a

<sup>72</sup> See Hallowell, 1939 and 1941.

<sup>73</sup> Gilfillan, 1901, p. 64; cf. p. 114.

laugh. "Tear jerking" or tragic stories of any kind would, in fact, be unthinkable among the Saulteaux. Laughter seems to be the catharsis they need for the resolution of tensions. Then, too, there is the joking relationship between cross-cousins of opposite sex. The bawdy exchanges between persons of this category are not only permissible, they are actually demanded. Since cross-cousins are found in every camp and in practically all social situations, laughter may be said to be one of the psychological functions of Saulteaux social organization.

The characteristic balance maintained between the expression and inhibition of emotion among the Saulteaux and that which prevails among ourselves can be epitomized by a few concrete illustrations. Once when I was preparing to photograph an old man, several Indians gathered around. Among them was a very dignified old woman, a Christian and a pillar of the Church, the mother of a large family of grown children. The old man had assumed a position in which it happened that his legs were spread widely apart. Just before I was ready to snap the shutter of my camera, the old lady suddenly reached towards the old man's fly as if to unbutton it. Everyone went into peals of laughter. The old man was her cross-cousin. But on other occasions I have seen this same old woman watch the departure of her husband without a gesture or change of expression and accept his return home after weeks of absence with a similar nonchalance.<sup>74</sup> And once, when her favorite son returned from boarding school after three years' absence, I saw him step off the boat and walk past his mother with scarcely a greeting, while she stood there impassively. Since I was living with this family, however, I knew about the excited talk that anticipated that homecoming and continued long after we were all finally settled in the kitchen. Yet one would have gained no clue to the emotion that seethed beneath the surface from the behavior observed on the dock. In public the pattern is always one of severe restraint under such circumstances.<sup>75</sup> Peter Grant observed a similar pattern of restraint among the Saulteaux over a century ago. He says, "Their manner of salutation is most ridiculous: when strangers or long absent friends meet, they remain like statues for a considerable time, with their faces hid or inclined to one side and without exchanging one word.

<sup>74</sup> Cf. Gilfillan, 1901, p. 86, who writes, "I have never seen the slightest endearment pass between husband and wife, not the slightest outward token of affection. Yet there is no doubt that they are as much attached to each other, especially in middle and later life, as those of our own race."

<sup>75</sup> Egerton R. Young, who spent a long period as a missionary among the Cree and Saulteaux of the Lake Winnipeg region, comments (1892, p. 19) on the emotional restraint in domestic life.

After a long pause, they smile or grin at each other, this is understood to be the prelude to asking news, and the conversation becomes general after they have smoken a pipe."<sup>76</sup>

I once witnessed the arrival of a group of inland Indians from Lake Pekangikum who had paddled two hundred and fifty miles to the mouth of the Berens River to receive their Treaty Money. They acted very much as the Saulteaux described by Peter Grant. After beaching their canoes they stood at the foot of the bank staring at the local Indians who had gathered at the top of the bank and were staring at them. Everyone seemed frozen by embarrassment. These Indians were not total strangers to each other, either. While there is not much social intercourse on account of the distance involved, there are blood connections and relationships through marriage. At the same time there are always latent suspicions between Indians of different communities, possibly very much greater in the past,<sup>77</sup> mainly due to the possibilities of sorcery, so that moving from one settlement to another even now stirs up a certain amount of anxiety. I found, for example, that some men of the Berens River Band at the mouth of the river were very loath to have their hair cut when up the river for fear that someone might obtain strands of it and do them harm. They hardly thought of this when at home. Hence a cautious and restrained manner of approach is adopted.

But sorcery may also emanate from individuals of one's own community and even from one's own relatives. Even the Christianized Indians believe this. In the summer of 1940 I learned of the death during the previous winter of a man whom I knew fairly well. Later I heard a rumor that he had been killed by his father's brother. Consequently, I believe that it is reasonable to assert that the major factor which was at the root of the latent suspicion and distrust that colored the interpersonal relations of the Indians of earlier periods operates today. In the last analysis, almost every Saulteaux believes that it is possible for another person to harm him by covert means. This idea is supported by the fact that some individuals have confessed to killing dozens of persons by sorcery. From the viewpoint of the Indians no better proof is needed that such things do happen. Even today it is literally true, as Schoolcraft says, that harm rather than good is anticipated from others. The same is true in other Ojibwa communities. Jenness, for instance, speaking of the present day Indians of Parry Island says, "Every man suspects his neighbor of practicing the nefarious art to avenge some fancied grievance, and the older and more conservative the Indian,

<sup>76</sup> Masson, 1890, vol. 2, p. 328; cf. Kohl, 1860, p. 35.

<sup>77</sup> This ever recurrent suspiciousness has been frequently commented upon. Cf. Landes, 1937, p. 102, and Gilfillan, 1901, p. 92.

the more he is held in suspicion. Probably there is not a single adult on the island who has not been accused of sorcery at some time or other, and who has not himself suffered some misfortune which he attributes to the same cause."<sup>78</sup> This is the psychological explanation, it seems to me, of the "atomism," or individualism, of Ojibwa society and of Indians with comparable cultures in the past. It is impossible for people to get together when their outlook is colored by the possibility of malevolence, particularly when there are no social institutions that demand a high degree of cooperation. Since covert malevolence is always potentially present in one's dealings with others and the only defense against it is one's own supernaturally augmented powers. Psychological security can only be achieved by the enhancement of "confidence in one's power to stand alone. Close kin are important because identification with them is possible. Religion is a system of obtaining individual power for individual ends, originally dependent upon the individual's ability to attain it."<sup>79</sup> Consequently, the better part of wisdom is to avoid offending others. In practice this means that an amiable front, the suppression of one's own feelings or opinions, and even positive helpfulness, is the best policy to pursue. Naturally this policy leads to a certain amount of dissimulation and the inhibition of many spontaneous impulses because its foundation is anxiety. One is even led to mistrust the sincerity of those who *do* appear to be genuinely pleasant, amiable and helpful people. When I heard that the old man mentioned above was reputed to have killed his nephew, I said to my informant, "But he was such a nice old man!" "That's just the reason I really believe he did it," was the reply.<sup>80</sup>

Thus, the latent mistrust engendered by a belief in sorcery has the widest ramifications in Saulteaux society. I think it explains the suppression of criticism in face-to-face relations, also mentioned in the older sources, the hesitancy to command others, and the ready assent to requests even though the individual may not carry them out. Hospitality, lending,<sup>81</sup> sharing, likewise may be motivated by anxiety, since a guest, a borrower or a neighbor may become piqued and seek retaliation by covert means. As Jenness says of the Parry Islanders, "He sets food before chance visitors of his own race, whatever the hour of the day or night, lest they resent any semblance of inhospitality and later cast a spell on himself and his household." A case is also cited in which a loan was refused. The man who requested it left in an angry mood. Later when the man who refused the loan was taken ill, he

<sup>78</sup> Jenness, 1935, p. 87.

<sup>79</sup> Cf. Mead's analysis of the Ojibwa (1937, pp. 489, 491, 498).

<sup>80</sup> Cf. a similar interpretation of surface amiability in Hallowell, 1940, pp. 404-405.

<sup>81</sup> Cf. Jenness, 1935, pp. 87, 88.

believed that he had been bewitched by the man he had turned down. A Saulteaux whom I know sold some brown sugar, at a considerable loss, to one of the sons of the "nice" old man who was said to have killed his nephew. My friend, who really wanted to keep the sugar for his own use, was warned that it was best not to deny the old man's sons anything, so he let one of them have the sugar cheap. On the surface it looked like a very neighborly gesture; actually the loss that he took was a kind of "life insurance" for himself and his family. The whole transaction was carried out in what would have appeared to any outside observer as the friendliest spirit. But I know that it was not a generous act and that my friend suppressed his genuine feelings in the matter.

It can readily be understood that if such care is taken to avoid offending others in such small matters of daily life, that the Saulteaux are even more careful to avoid any open expression of anger in face-to-face relationships.<sup>82</sup> An overt expression of anger or aggression of any sort in this society is tantamount to a challenge to a duel by sorcery,<sup>83</sup> since there is no institutionalized form for settling such matters in any other way. Consequently, individuals maintain their taciturnity in face-to-face relations even though they may simmer with suppressed emotion. If retaliation is sought it is always by some covert means. It is obvious that the deflection of emotion that is demanded not only requires a great deal of restraint; anxiety is also generated because no one knows when, how or even if, retaliation will take place. Hence, the amiable demeanor adopted by the Saulteaux cannot be separated from the suppressed aggression that is experienced. This means that there is a deep-seated ambivalence in their emotional structure.

Turning now to the Rorschach protocols, which furnish us with direct evidence of the manner in which the personality of individuals is functioning, we find corroboration for the inferences drawn from Saulteaux culture, first hand observation of the behavior of individuals and other case material. The detailed evidence will not be presented here since its primary interest is for the Rorschach expert, but a few outstanding points in the evidence may be mentioned by way of summary.

The most prominent feature in the great majority of records is the emphasis on strong restraint and control. From the Rorschach evidence alone

<sup>82</sup> Jenness, 1935, p. 88, says that the Parry Islander "strives to avoid malice and ill-will by hiding his emotions, and by carefully weighing his words lest he give vent to some angry or ill-timed remark." Ducatil, a casual observer of the La Pointe Ojibwa in 1846 writes (p. 28), "A very remarkable trait of character in the Indians is, that they never quarrel, nor address insulting epithets to each other."

<sup>83</sup> See Hallowell, 1940, pp. 402-403, 406-407.

one would be bound to infer that the Saulteaux were a people whose personal lives were organized within the ambit of formalized habit patterns and that very little of their emotional and imaginative life escapes these bonds. Another inference would be that behind the façade represented by this severe control is wariness and caution. There is meagre evidence of spontaneous emotional expression or testing other peoples emotional reactions realistically in face-to-face relations. The sort of social roles the individual conceptualizes are on the whole very passive—standing, sitting, looking, sometimes talking. However, almost half of the individuals tested (over half of the inland women), in spite of their introverted personalities and their lack of spontaneous emotional reactions, were sensitive, in some cases hypersensitive, to outer emotional stimuli. Among the inland men who showed this sensitivity, only one showed a tendency to adjust to it and act upon it, but his protocol revealed that tension and fear restrained him. Not able to adjust in this extraversial way, neither has he been able to adopt in any great measure the general pattern of reactions, so that he is a very maladjusted person. Of the two inland women with a tendency to act upon their extraversial tendencies, one rigidly controls her hypersensitivity, and the other, not quite so rigidly controlled, has anxiety that interferes with her adjustment. In the group at the mouth of the river there are many evidences in the Rorschach records that changes are taking place in the basic personality structure. Many more of those who show sensitivity to outer emotional stimuli are attempting to adjust in an extraversial manner under the pressure of contacts with white people and their culture. These men and women, while on the whole less rigidly controlled and restrained, all show anxieties coming to the surface. The women, however, appear to be much more successful in their attempts at social adjustment. On the other hand the two persons who have broken most completely away from the old pattern are also women. One is a girl who has gone wild, losing all restraint, and the other is a very egocentric, hot-tempered individual by any Indian standards, who, however, retains a large measure of control.

The imaginative life also shows evidence of repression although this is less repressed than outward emotional reactions. Evidently, unless the individual feels strong enough through acquired magic powers, all phantasy is dangerous, more especially aggressive phantasy of which there is little evidence. Where aggression is mainly covert, hostile thoughts must be inhibited in the individual himself for fear of inviting the evil thoughts of others to attack him. The greater development, relatively speaking, of phantasy over social and emotional rapport exposes the individual to the development of convictions divorced from any testing of their objective

reality. There is thus a danger that he will act upon some distorted idea of what another intends.

The typical Saulteaux character structure as revealed by the Rorschach is largely built upon the basis of defense mechanisms against anxieties. This is understandable in view of the great lack of other developed technics for mastering the economic and social environment. The best defense against all these threats is, as Mead has pointed out, a rigid self discipline to stand alone and to acquire as much personal magic power as possible. For so rigidly patterned a personality it is not surprising that the missionaries found these Indians resistant to any change of beliefs. It is not stubbornness, nor obstinacy, but an incapacity for change in the habitual ways of thinking and feeling.

It should be understood that without a knowledge of the cultural background and actual behavior of individuals it would be impossible to infer from the Rorschach data alone the *specific conditions* which produced the typical personality picture. On the other hand, any deductions one makes about the personality of individuals from a knowledge of the cultural background of these people and their external behavior needs to be checked by some method of controlled observation on the individuals themselves. The Rorschach technique provides such a method since it offers an integral picture of the personality as it functions under given conditions. It enables us to approach people directly as people.

NORTHWESTERN UNIVERSITY  
EVANSTON, ILLINOIS.

# THE MYTHOLOGY OF THE NORTHERN AND NORTHEASTERN ALGONKIANS IN REFERENCE TO ALGONKIAN MYTHOLOGY AS A WHOLE

MARGARET W. FISHER

THIS paper is intended as a kind of supplement to Roland B. Dixon's earlier paper, "The Mythology of the Central and Eastern Algonkins,"<sup>1</sup> in which the available mythological material, now swelled by several important collections, will be examined for its bearing on the provisional conclusions reached by him. The difficulties in the way of a comparative study of Algonkian mythology complained of by Dr. Dixon—the incompleteness of the record, and particularly its unevenness—to a large extent still exist. However, these are difficulties which we cannot hope to see eliminated, and enough new material has been added since 1909 to make it worthwhile to take stock once again.<sup>2</sup>

For purposes of this paper, the various Algonkian tribes have been grouped as follows:

## Eastern, or Wabanaki:

Micmac

Passamaquoddy

Malecite

Penobscot

Wawenock

Abenaki (St. Francis)

## Northeastern:

Montagnais-Naskapi

Cree

## East-Central:

Algonquin

Ottawa

Ojibwa (including Mississagua,  
Saulteaux, and Skinner's  
"Bûngi")

## Central:

Potawatomi

Fox

Sauk

Kickapoo

Menomini

## Western:

Arapaho

Gros Ventre

Blackfoot

Cheyenne

<sup>1</sup> Dixon, 1909.

<sup>2</sup> The writer is indebted to Robert H. Lowie for his generosity with his private library; to A. Irving Hallowell, Frank G. Speck, W. Duncan Strong, and the late Truman Michelson for access to mythological collections in manuscript; to Truman Michelson and Father John M.

This grouping is basically linguistic<sup>3</sup> but also to some extent cultural in that the Potawatomi have been put into the Central, rather than East-Central group.

The mythology of the tribes in the Eastern, Northeastern, and East-Central groups has been considered the main subject matter of the paper. The myths of the remaining groups were examined for correspondences.

The presentation of results has raised several questions. Some selective principle had to operate, as the entire body of folklore could hardly be given adequate treatment within the scope of a single, brief paper. The first decision was to focus attention on the material dealing with the true mythological period, that period when the world was young, and nature rather more malleable than now, when an apparently irrelevant action could set a pattern for all time, and animal and human identities were less distinct. This line has not been always easy to draw, and in some cases may have been drawn incorrectly, but this principle has served to exclude war stories, and other exploits of living or recently dead persons. Tales of patently European derivation, although frequently fitted into the true mythological period, have also been omitted, as deserving individual attention of a rather different sort. For the same reason various highly interesting origin myths have regretfully been excluded from consideration at the present time. This has left the main cosmogonic myth cycle, hero myths, the trickster series, a few widespread phallic episodes (not truly plots, but plot elements which lead an independent existence), tales of cannibals, of adventure, of human passion, and those tales dealing with the semi-human, semi-animal beings of the mythological period. Since the purpose of this study is comparative, the final principle of selection has been to eliminate those myth plots (or plot elements) not common to two or more Algonkian tribes.

A word should be added about the comparative tables. The trickster tales, with their episodic character, have yielded to tabular presentation reasonably well. The culture-hero biographies fare less well, as the presence or absence of single elements is of less interest than the cohesive wholes of which they form a part. The tables concerned with the minor hero tales are admittedly inadequate. The long involved plots which so many of these tales possess make them unsuited to such treatment. However, it should be kept in mind that the tabular presentation of all this material has not been employed for the purpose of quantitative comparisons, but because the

---

Cooper for aid in the classification of doubtful Algonkian source material; a further debt is owed to Dr. Hallowell, at whose suggestion this paper was undertaken, for assistance in its framing.      <sup>3</sup> Michelson, 1913.

writer was unable to devise better means for presenting compactly the evidence on which the descriptive presentation rests. The tables should be taken as just that, nothing more. It is not claimed that they are exhaustive. It is hoped that they are free from serious omissions.

The mythology of North America, north of Mexico, as has been so often pointed out, is, with the exception of the Eskimo fringe and the Southwest region, much more notable for its basic similarities than for its differences, and this in spite of linguistic barriers which to the English-speaking observer seem truly formidable. Distinctive differences can also be found, however, and in the mythologies of the tribes now under discussion, such differences come out most clearly in the portions dealing with the serious adventures and character of the culture-hero. A detailed concordance of the varying elements in the biographies of these major culture-heroes is beyond the scope of the present paper. Individual variations have been temporarily suppressed in favor of a simplified version on which there is general agreement, for the purpose of pointing up more clearly what can fairly be considered tribal similarities and differences in the concept of the culture-hero. In the mythologies of the Northern and Eastern Algonkians, three differing major heroes can be distinguished:<sup>4</sup> Gluskabe, of the Wabanaki group; Tcikapis, the dwarf, of prime importance in the Montagnais-Naskapi area, and Nanabozho, to use just one of the many names and epithets by which the main trickster-transformer of the Algonkians is known.

Gluskabe has met with little attention except from Wabanaki specialists. Others have tended to brush him aside as a variant of Nanabozho. The only justification for this would seem to lie in the difficulties presented by the unsatisfactory state of the Gluskabe material. Even the earliest collections bear unmistakable indications of the dwindling vitality of native traditions, while certain of the accounts appear to be the product of senile garrulity.

The Gluskabe material from the various branches of the Wabanaki is uneven. None at all has been obtained from the St. Francis Abenaki, and from the Wawenock we have but a fragment. The Malecite material is provocative, but follows a tangent, being less interested in Gluskabe than in his "brother," Mikumwesu.<sup>4a</sup> From the Penobscot, Passamaquoddy and Micmac, in addition to many divergences, there is a solid core of material on which there is substantial agreement. The major disagreement is the Penobscot conception of Gluskabe's childhood, which shows him as a brash

<sup>4</sup> Standardized names are used to avoid burdening the paper unduly with linguistic variants.

<sup>4a</sup> Edward Jack (1891-1892, p. 202) was told by a Malecite informant that their traditions regarding Gluskabe were received from the Micmac, and that the language spoken by Turtle was Micmac.

youth under the tutelage of a grandmother who planned to make of him an instrument for bettering conditions for mankind.

If we ignore confused and garbled details and focus attention on the recurring episodes of the Gluskabe cycle, a figure emerges with several positive and important differences from Nanabozho. While Gluskabe is shown as enjoying an occasional practical joke, particularly in his relations with Turtle, on the whole the characterization "He was always sober, grave and good; all that the Indians knew of what was wise and good he taught them,"<sup>5</sup> appears justified by the myths told of him. None of the crude buffoonery associated with Nanabozho is attached to Gluskabe. His altruistic concern for mankind is pronounced, finding a place in the myths themselves, not merely in statements about him.

Much has been made of the fact that Nanabozho and Gluskabe had each a wolf "brother," but the differences in the relationship are more striking than the resemblances. Nanabozho and his wolf companion—the latter is as frequently the hero's nephew, or even nephew-by-courtesy as "brother"—appear as a formidable combination of hunter and dog. On the other hand, Gluskabe and his wolf twin were in irreconcilable conflict even before birth. At birth the wolf wilfully caused the mother's death, and Gluskabe's first recorded act was the killing of his wolf brother. (This whole episode, so strongly suggestive of Iroquois influence, is lacking in Penobscot.)

In brief, although Nanabozho and Gluskabe may both have been derived from a common Algonkian prototype, as they are known to us they have little in common, and the adventures ascribed to them show little overlapping of importance beyond the fact that each took revenge for the mother's death, an episode which each may well owe to Iroquois influence.

Tcikapis is an interesting personality who deserves more attention than he has had.<sup>6</sup> The main tales told about him are singularly consistent from

<sup>5</sup> Rand, 1894, p. 232. The myths in which Gluskabe and Turtle both appear are dominated by Turtle, a frequent butt of Algonkian humor.

<sup>6</sup> One is tempted to speculate on the possibility that Tcikapis represents an older Algonkian mythological concept than either Gluskabe or Nanabozho. An interesting Cree account of Tcikapis (Gordon, C.H.M., 1925) brought to my attention by Dr. Hallowell, states that his adventures took place long before the exploit of the great conjuror who saved the animals from the flood and recreated the earth from the grains of sand brought up by mink [Nanabozho]. And is there any relation between Tcikapis and Mikumwesu, who figures in a Malecite myth obtained by Mechling (1914) as an older and more powerful brother of Gluskabe's, a tiny man who could do more with his weak-looking bow than Gluskabe with his powerful one? According to Hagar, 1896, p. 173, one Micmac tradition made the original Megumooweco the father of Gluskabe. And what about the myth in Prince's Micmac manuscript, in which the narrator speaks of the Indians of the olden time, and says they never knew any God except

tribe to tribe, varying very little from the Montagnais version as given by Le Jeune in 1637.<sup>7</sup> His parents were killed by bears<sup>8</sup> just before he was born, and his sister took him from his mother's womb and reared him. He never grew in stature, remaining the size of a toddling child, but he possessed a formidable strength, using trees as arrows for his deceptively weak-looking bow. The principal episodes of the Tcikapis cycle (see table II-B) are known with little variation, and under cognates of the same name, to the Montagnais-Naskapi, Cree, Algonquin, and Ojibwa, and turn up also among the Kutenai as a tale of a brother and sister Tsa'kap.<sup>9</sup> Only among the Montagnais-Naskapi, however, does he achieve the status of culture-hero. To them, Speck reports, he stands forth "as the master of that conjuring craft exerted over man and animal which the hunter strives so hard to develop within himself."<sup>10</sup> The Montagnais-Naskapi think of him as having altruistic concern for mankind. Such altruism is but weakly developed in the myths themselves.

Nanabozho (using the term loosely to include Wisakedjak and all the many variants) is a composite figure, replete with contradictions. On the one hand he is the most powerful of manitous, capable of re-creating the earth from a few grains of sand, and on the other a harum-scarum buffoon, the butt of the grossest of jokes, and a frequent victim of his own stupidity and greed. The psychological problem which he flaunts has captured the attention of innumerable writers, but the core of it remains refractory. We can disentangle various skeins, showing that here he has been identified with the Great Hare and there with the Wolverine, but why these disparate elements should have been woven together still eludes us.<sup>11</sup>

---

Mekmues, their good spirit? (Prince, 1906, pp. 89-90). Prince was disturbed by this and comments that the word is equivalent to the Passamaquoddy Mickumwes, and is really a wood devil naturally small, but with the power of increasing its stature at will. No elaborate speculative structure can be reared on so slight a foundation, but the indications are that Tcikapis might repay intensive study.

<sup>7</sup> Thwaites, 1896-1901, vol. 12, pp. 31-37.

<sup>8</sup> Usually, although in some versions it is cannibals, and in one instance a smallpox epidemic.

<sup>9</sup> Boas, 1918, pp. 44-47.

<sup>10</sup> See Speck, 1935a, pp. 53-55, for an estimate of Tcikapis.

<sup>11</sup> The Wolverine aspect is most strongly marked in the Cree and Ojibwa cycles, and occurs also in some of the Menomini versions. It is brought out in that sequence in which Nanabozho runs with the wolf-pack, and after several trickster-type episodes is finally sent away by them. The reason for denoting it specifically Wolverine is that the wolf-pack sequence is told by the Passamaquoddy and Montagnais-Naskapi, and in certain eastern Cree versions with the Wolverine as hero, and the character of the incidents attests that this is where it properly belongs. One Cree version makes the identification of Wisakedjak with the Wolverine

The Nanabozho myth, the most prominent of the Algonkian cosmogonic myths, begins with the birth of the hero and follows his career to its usual culmination in the deluge and recreation of the earth. The deluge and recreation myths attracted the attention of all the early writers because of the biblical parallel, and consequently we have many versions of this part of the cycle. Unfortunately there is a relative paucity of versions concerned with the culture-hero's birth and early adventures. Even the earliest of the available versions have a composite character, and the writer inclines to the belief that "Nanabozho," as known to us, is not a really old Algonkian concept, but rather a synthetic figure growing out of the reworking of various older Algonkian myths, possibly under Iroquois influence.

The culture-hero biographies known to us come largely from the Cree, Ojibwa, and Menomini. One or two versions each exist from the Ottawa, Potawatomi, Sauk, and Fox. Analysis of this material shows that there is a Cree type, an Ojibwa type, and a third quite different version which might be called the Potawatomi type, since our one Potawatomi version exemplifies it in its simplest form. These can be summarized as follows:

*Cree type.* The hero was the elder brother in the Rolling Skull myth (a widely distributed Algonkian myth, but except for the Cree, connected with the culture-hero only in one Blackfoot fragment, undoubtedly under Cree influence). He was kidnapped by an evil magician who refused to take the younger brother, who then turned into a wolf. After a series of contests with the magician, whose daughter he married, the hero triumphed, and went to look for his lost brother. He found him as a wolf, ran with the wolf pack, had a series of trickster-type adventures, and was finally dismissed (by them) with one wolf as a companion. This wolf failed to heed the hero's warning, and was seized by the under-water manitous. The hero, working on information received from the kingfisher, transformed himself into a stump near the basking place of the manitous. They satisfied themselves of the genuineness of the stump by tests, and went to sleep. The hero wounded the chief manitou, and later killed him, disguised in a Frog-doctor's skin. A deluge ensued.<sup>12</sup> The hero escaped on a raft, to which the animals swam.

---

explicit. Wolverine was going along boasting of his exploit in killing Big-Skunk, when a wolf-pack heard him and decided to have some sport. They rushed him. He fell down, and when he stood up again, this time it was as Wisakedjak. (Skinner, 1916).

<sup>12</sup> There is a remarkable stability of detail connected with the wounding and killing of the chief of the under-water manitous, as told from tribe to tribe. Only one notable variation occurs. Some versions have the deluge follow immediately on the wounding of the manitou. Other versions place the flood after the manitou has been killed. Still other versions have the

After other animals had failed, Muskrat succeeded in diving for a bit of earth, from which the hero recreated the earth.

*Ojibwa type.* The hero's mother was a virgin, magically impregnated by a wind. The four winds were born with him, and the mother was killed at their birth (some say the winds tore her to pieces, others that Flint was born at the same time and caused her death). Nanabozho grew magically from a clot of blood, and first appeared as a Hare. Of his later adventures (See Table II-C) there is most agreement on the Jonah episode, and on the killing of a hostile being, protected by a ring of pitch-like water, sometimes identified with the Flint brother who caused the death of his mother.<sup>13</sup> Then comes the running with the wolf-pack, and from that point on the Ojibwa type is identical with the Cree.

*Potawatomi type.*<sup>14</sup> Nanabozho was the eldest of quadruplets. He and the second brother had human form. The third fled toward the North, became a White Hare and a mighty magician. The fourth was Flint, who killed the mother. When the hero grew to manhood he killed Flint. He and his other brother lived by themselves, and excited the jealousy of the manitous, who contrived to drown the younger brother. The hero was inconsolable, and warred against the manitous. To appease him they initiated him into the medicine rites. The brother came back as a ghost, was sent to preside over the souls of the dead. Then Nanabozho initiated the Indians into the medicine rites.

Both Ojibwa and Potawatomi type versions have been found separately among the Menomini, along with enough fragments to make it appear that the Ojibwa type probably should be considered dominant.

The Fox version follows the Potawatomi type up to the hero's mourning for his brother. The manitous, worried, sent the brother back, but the hero sent him away to preside over the land of souls. There was no appeasement (the Fox do not have the midewiwin), and the hero took his revenge, causing the deluge, etc. The Fox version agrees in all major details with the Cree and Ojibwa in this portion of the myth.

The Sauk, Jones says, tell the same story, leading up to the origin of the

waters rise and then recede after the wounding, with the true deluge occurring after the death of the manitou. It is possible that I have not given sufficient attention to this variation, but in my judgment it seems largely a matter of individual artistry in story-telling.

<sup>13</sup> Not always so called, but to be identified as Flint by his characteristic of hewing flakes from his shins.

<sup>14</sup> From Chittenden and Richardson, 1905, vol. III, pp. 1080-1084. Chamberlain, 1891, p. 206, gives this citing Schoolcraft. But Schoolcraft took it from de Smet. See Chittenden and Richardson, 1905, vol. III, p. 1047.

midewiwin. Whether that means it includes the deluge portion or not is not clear. However, Cutting Marsh<sup>15</sup> reports a Sauk version in which, after the brother was sent to preside over the dead, the hero attacked his enemies with fire. They attempted to freeze him and failed, so next they tried a flood. The hero escaped on a raft, and then follows the earth diver and re-creation of the earth.

From the Ottawa we have several deluge fragments, but just one biography of the culture-hero. That is closest to the Ojibwa type.

From the remaining tribes, with the exception of the single Blackfoot fragment mentioned above, nothing is reported as to the birth and early adventures of the Nanabozho personality.

Turning now to the remaining mythological material, one is impressed by a general family likeness, which, for that matter, extends well past Algonkian boundaries. In the trickster tales this similarity extends to plot detail, as can be seen by an inspection of Table III. In the hero tales with the, exception of a handful of plots, this similarity is largely a matter of general import. The hero always triumphs after surmounting great difficulties, in which magic of one kind or another usually plays an important role. These tales are not understood as true stories, but are analogous to our European fairy tales, from which, in fact, they have borrowed liberally to provide new difficulties and new means of overcoming obstacles, for their own heroes. Unlike European tales, with their emphasis on princes and princesses, these Algonkian tales are severely democratic. Where chiefs and their families enter the plot, it is usually to have their pride humbled, and the hero's triumph made the more complete. For the most part the hero falls into one of two classes: either he is an anonymous poor boy—orphaned, or otherwise neglected or mistreated—whom the supernatural powers befriend; or he is himself a supernatural who used magical means to get himself born in human form (blood-clot, splinter-foot, medicine-root, etc.), in order to right wrongs which had excited his sympathies. Such a hero has great shamanistic powers in his own right, and the tale may dwell lightly on his altruistic motives, taking delight in the recounting of his magical exploits. Sectional and tribal differences in these tales appear to lie in the differing backdrops to action which forest and plain provide, rather than in the purpose for which the tale is told, or the basic framework of plot, through which that purpose is realized.

The trickster tales are perhaps told mainly to amuse but they are by no means devoid of moral import.<sup>16</sup> One favorite Algonkian moral theme is that

<sup>15</sup> Marsh, 1900.

<sup>16</sup> Many of these tales are on the robust side, strongly physiological in character. They are the

power, if abused, will be lost. This as can be expected, recurs frequently in their serious literature, but the more interesting point is that it is to be found as well in the trickster tales. Regional differences in the defining of abuse of power can be distinguished. On the Plains, it is defined in a mechanical way, and is tied up with the sacred number four. Power is given to do a thing four times; if a fifth is attempted, disaster results. In the Eastern versions, power is given in answer to a need. To expend this power idly, where no real need exists, results in its loss.<sup>17</sup>

Somewhat related to the abuse of power theme, is the theme that the individual should not make immodest demands on the supernaturals. This idea finds expression in two principal myths. One is concerned with the evil effects of continuing to fast after the blessing had been bestowed, which receives its greatest development among the Ojibwa, but also occurs in Fox and Menomini mythology. The other is the very widespread myth in which the culture-hero answers the request for eternal (or merely very long) life by turning the supplicant into a stone or cedar tree.

Another theme which receives emphasis in both serious and trickster tales concerns the fate of young women who were "too proud" to marry the man selected for them.<sup>18</sup> This theme recurs so frequently as to throw into high relief the struggle formerly carried on in Algonkian society against the forming of romantic attachments. This struggle is also reflected in the almost complete absence of romantic love as a theme. The devotion of a man to his family gets some attention, and there is even a tale of devotion so great that a man followed his wife to spirit land and brought her back to life. But these are tales of family love. Tales of star-crossed young lovers can be found, but are for the greater part conspicuously absent. Tales of adultery are told from the injured husband's point of view, with retribution swift and complete.

---

rough equivalent of the "dirty story" in our own society, but their emphasis runs far more to excrement and excremental functions than to sex. Without delving into psychoanalytical speculation it is perhaps worth pointing out that Algonkian convention afforded more privacy to defecation than to sexual intercourse.

<sup>17</sup> The Eye Juggler myth is a good example of this difference in the definition of abuse of power contained in an otherwise identical plot. In Eastern versions the trickster was only to do this trick if his eyes were sore. On the Plains he was limited to four times. The Plains Cree version has been influenced by both ideas. There he was given the power to do it four times, but only if he had a headache.

<sup>18</sup> While this type of tale is usually concerned with young women, the too-proud young man also gets some attention, notably in the tale in which the trickster disguises himself as a woman, marries the young man, and pretends to have a baby, and then exposes the whole elaborate hoax. It is probably significant that this young man is almost invariably described as a chief or the son of a chief.

Some of the most ingenious plots in Algonkian literature occur in the animal tales. In addition to their entertainment value, many are highly instructive as natural history, though it is difficult to say whether or not that aspect was intentional. Some of them are clearly nature myths, others may once have been such.

Tales of marriages with animals occur in virtually every tribe, but here the difference in spirit is very great. The Penobscot versions are social origin myths. The Montagnais-Naskapi myths are of a high religious nature, probably their most important myths. In these, the marriages are undertaken under dream control, and the human being thus married into the animal kingdom becomes a species master, replenishing the species and responsible for sending animals to be killed by worthy hunters. The beaver and deer myths occurring outside the Montagnais-Naskapi area are also serious, though less highly charged. Many of the remaining myths are tied up with punishment for pride.

**Summary:** To turn once more from the more general aspects of Algonkian mythology to a comparison of tribal similarities or the lack of them, a few general conclusions may be stated.<sup>19</sup>

In the serious culture-hero myths are to be found the main lines of cleavage dividing the tribes of the northern and eastern area. The Eastern, or Wabanaki group, stands quite apart from the rest, though with less internal cohesiveness than might have been expected. Penobscot is particularly divergent in making the hero an anonymous poor-boy such as is to be found in so many Algonkian tales.<sup>20</sup>

The hero-dwarf of the Montagnais-Naskapi is a tantalizing figure, not related to the Nanabozho cycle. There is some evidence on which to rest the hypothesis that this dwarf had a counterpart of equal importance in earlier Wabanaki mythology. The cycle of adventures attributed to him has been recorded in considerable detail from both the Cree and the Ojibwa, but without the overtones of deep religious significance which it has among the Montagnais-Naskapi. To a somewhat lesser extent this cycle has also

<sup>19</sup> It should be remembered that the material selected for comparative study is drawn first of all from the Wabanaki, Montagnais-Naskapi, Cree, Algonquin, Ottawa, and Ojibwa which together form the area of primary interest. No material has been used from the Central and Western groups unless it found a correspondence in this primary area. Therefore, correspondences between members of the latter groups, not shared by the primary group, have been completely ignored.

<sup>20</sup> Unfortunately we have no culture-hero material from the St. Francis Abenaki. The published Abenaki material of any kind is very slight, consisting mostly of witchcraft lore which seems to be drawn nearly as much from European as from native Shamanistic lore.

been reported from the Algonquin, and strong echoes of it have been reported from the Menomini.

The culture-hero of the East-Central group is also the culture-hero of the Cree. In his serious aspects he is all but unknown to the Western group. The only evidence that his serious myth was ever a part of Montagnais-Naskapi lore is contained in a single reference in the Jesuit Relations. No trace is to be found in any of the more recent works. Cree and Ojibwa cycles are completely concordant except for that part dealing with the birth and early adventures of the hero. The Potawatomi version is most divergent, and Sauk next most. The Fox myth has combined Cree-Ojibwa and Potawatomi features. Both Potawatomi and Ojibwa versions are known to the Menomini, the Ojibwa type appearing to be dominant.

Between the Wabanaki and Ojibwa-Menomini cycles there are a number of superficial points of similarity. The one important likeness, dealing with the death of the mother and the hostility between the brothers, is one that each group may owe independently to Iroquois influence. It is not shared by the Cree.

Where the trickster plots are concerned, the Wabanaki group stands apart in separating its culture-hero cycle from the trickster tales, attributing the latter to a variety of animal actors: Wolverine, Raccoon, Badger, Hare, etc. Plot correspondences are greatest with the Cree and Ojibwa, least with the Fox, Sauk, and Kickapoo.

The fewest trickster tales are reported from the Montagnais-Naskapi area. These revolve about either Wolverine or a shadowy figure reminiscent of Nanabozho in his trickster aspect. Virtually all the Montagnais trickster tales have also been reported from the Cree, but the reverse is far from being the case. The next closest association is with the Wabanaki group, and then with the Ojibwa.

The Cree and Ojibwa have by far the largest number of trickster tales reported from any tribe in the area of primary interest. The closest correspondence of each is with the other, and secondarily with the Western group. Cree versions of trickster tales are particularly interesting, as many of them show combined Eastern and Western influences.

In the case of the remaining mythological material, the Fox-Sauk-Kickapoo group is further from the northern and eastern groups taken as a whole than is any other part of the Algonkian family. The Wabanaki material is closest to Ojibwa. It is also closer to Menomini than to either Montagnais-Naskapi or Cree, and closer to the western group than to the Fox-Sauk-Kickapoo.

Cree has fewer correspondences with the Western group in this type of

material than it had in trickster tales. And the Montagnais-Naskapi correspondences are somewhat less with the Cree than was the case in the trickster material. The Ojibwa material appears to occupy a rather central position, showing a greater number of absolute correspondences with each of the other groups than any one of them does with any other single tribe in the area of primary concern.

The main differences between these conclusions and those reached by Dixon are to be explained by the enormous increase in our knowledge of Ojibwa material. Dixon relied mainly on Schoolcraft for Ojibwa, keeping Mississagua and Saulteaux both distinct from Ojibwa proper. As the material has come in, the differences between the various sub-branches of the Ojibwa have lessened and the position of the Ojibwa in relation to the other groups has changed.<sup>21</sup> The Cree and Montagnais-Naskapi record has also become much fuller, and has shifted the position of these tribes somewhat.

<sup>21</sup> The writer kept the Ojibwa sub-groups separated on work sheets, but found no justification for doing so in the final results. One interesting difference brought out by Dr. Hallowell's Saulteaux material should be noted, however. The Saulteaux call their culture-hero Wisaked-jak, agreeing in that respect with the Cree, although they are aware that other Ojibwa groups call this same hero Nanabozho. They start their culture-hero myth with the running with the wolf-pack episode. They also have the myth of the birth of the four winds, the Great Hare, and Flint, but they do not equate the Great Hare with their culture-hero.

## TABLES II-IX

### EXPLANATION OF SYMBOLS USED IN THE TABLES

- Element present
- Element vouched for as absent
- × Somewhat divergent

Letters refer to the identity of the hero or trickster:

|    |   |
|----|---|
| B  | Badger  |
| F  | Fisher  |
| H  | Hare  |
| M  | Mink  |
| P  | Panther   |
| R  | Raccoon   |
| T  | Trickster-Transformer                                 |
| t  | attributed to trickster, but not in the usual version |
| Tc | Tcikapis  |
| W  | Wolverine   |

TABLE II. CULTURE-HERO SERIES

|   | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|---|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| A. GLUSKABE   |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 1. Hero is elder of twins; the younger twin, Wolf, bursts through mother's side at birth, killing her   | T      | T             |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 2. Hero and brother seek to learn in "deceitful confidence" the secret of each other's lives. Hero deceives brother (cat-tail rushes) and slays him |        | T             | T        |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 3. Hero is abandoned by jealous neighbors and his housemates kidnapped  | T      | T             |          |           |                    |      |           |        | X          |     |      |          |          |         |             |           |          |
| 4. Hero rides a whale   | T      | T             |          |           |                    |      |           |        | X          |     |      |          |          |         | X           |           |          |
| 5. Hero overcomes difficulties, rescues his housemates  | T      | T             |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 6. Hero overcomes Jug-Woman   | T      | T             | T        | T         |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 7. Hero survives trip through dangerous underground rapids  | T      | T             |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 8. Hero rescues friend from snake   |        | T             | T        |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 9. Hero chases a giant beaver which gets away   | T      | T             | T        |           |                    |      |           |        |            | T   |      |          | T        |         |             |           |          |
| 10. Hero reduces the size of dangerous beasts   |        | T             | T        | T         |                    |      |           |        |            |     | X    |          |          |         |             |           |          |
| 11. Hero breaks the wind-bird's wing, regulates wind  | +      | T             | T        | T         |                    |      |           |        |            |     | X    |          |          |         |             |           |          |
| 12. Hero kills the Frog monster, releasing impounded water  | +      | T             | T        | T         |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 13. Hero takes a teasing type of interest in Turtle's affairs   | T      | T             | T        | T         |                    |      |           |        |            |     | T    |          | T        |         |             |           |          |

Table II. Culture-Hero Series (Cont.)

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 14. Hero, retired from world, answers request for eternal life by turning supplicant into tree or stone; grants more moderate requests | T      | T             | T        |           |                    |      |           |        | T          | T   | T    | T        |          |         |             |           |          |

## B. TCIKAPIS

|  |  |   |    |                 |                 |    |  |   |  |  |   |   |   |   |  |  |  |
|--|--|---|----|-----------------|-----------------|----|--|---|--|--|---|---|---|---|--|--|--|
| 1. Hero taken from dead mother's womb and brought up by sister |  |   | Tc | Tc <sup>1</sup> |                 | +  |  |   |  |  |   | + |   |   |  |  |  |
| 2. Jonah   |  |   | Tc | Tc              | Tc <sup>2</sup> |    |  |   |  |  |   |   | - | + |  |  |  |
| 3. Kills monster which had slain parents                       |  |   | Tc | Tc              | Tc              | Tc |  |   |  |  |   |   |   |   |  |  |  |
| 4. Pandora   |  |   | Tc |                 | Tc              |    |  |   |  |  |   |   |   |   |  |  |  |
| 5. Scalds cannibal women                                       |  |   | Tc | Tc              | Tc              |    |  |   |  |  |   |   |   |   |  |  |  |
| 6. Chisels beaver with giants                                  |  |   | Tc | Tc              | Tc              | Tc |  |   |  |  |   | X |   |   |  |  |  |
| 7. Breaks arm of giant who tries to abduct sister              |  |   | Tc |                 | Tc              |    |  |   |  |  |   |   |   |   |  |  |  |
| 8. Snares sun  |  | - | Tc | Tc              | Tc              | Tc |  | + |  |  | + |   |   | + |  |  |  |
| 9. Lives in the moon   |  |   | Tc | Tc              |                 |    |  |   |  |  |   |   |   |   |  |  |  |

<sup>1</sup> The Tcikapis cycle is reported from the Eastern Cree only, except for the sun-snarer item, which is known to the Plains Cree concerning Tcikapis, and is also attributed by them to Wisakedjak.

<sup>2</sup> The Jonah item is told of Tcikapis only by the Saulteaux. In Ojibwa mythology it is usually told of Nanabozho.

Table II. Culture-Hero Series (Cont.)

|   | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Ottawa <sup>3</sup> | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|---|--------|---------------|----------|-----------|--------------------|------|---------------------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| <b>C. NANABOZHO</b>   |        |               |          |           |                    |      |                     |        |            |     |      |          |          |         |             |           |          |
| I. Birth  |        |               |          |           |                    |      |                     |        |            |     |      |          |          |         |             |           |          |
| 1. Hero is magically sired by wind  |        |               |          |           |                    |      |                     |        | T          |     |      |          | T        |         |             |           |          |
| 2. Hero is born as a rabbit   |        |               |          |           |                    |      |                     |        | T +        |     |      |          | T        |         |             |           |          |
| a. From bloodclot   |        |               |          |           |                    |      |                     | T      |            |     |      |          | t        |         |             |           |          |
| 3. Hero's mother is killed at birth by his brother(s)                                 |        |               |          |           |                    |      | T                   | T      | T          |     |      |          | T        |         |             |           |          |
| a. Winds  |        |               |          |           |                    |      | t                   |        |            |     |      |          | t        |         |             |           |          |
| b. Flint  |        |               |          |           |                    |      |                     | T      | T          | T   |      |          | T        |         |             |           |          |
| 2. Prediluvian adventures   |        |               |          |           |                    |      |                     |        |            |     |      |          |          |         |             |           |          |
| 4. Theft of fire, in form of rabbit   |        |               |          |           |                    |      |                     |        | t          |     |      |          | T        |         |             |           |          |
| 5. Struggle with father or brother ("deceitful confidence")                           |        |               |          |           |                    |      |                     |        | T          |     |      |          |          |         |             |           |          |
| 6. Jonah  |        |               |          |           |                    |      |                     | T      | T          |     |      |          | t        |         |             |           |          |
| 7. Killing of grandmother's bear paramour   |        |               |          |           |                    |      |                     | T      |            |     |      |          | t        |         |             |           |          |
| 8. Powerful being living on island protected by pitch is fatally wounded in hair-knot |        |               |          |           |                    |      |                     | T      |            |     |      |          | t        |         |             |           |          |
| a. Flint brother  |        |               |          |           |                    |      |                     | T      | T          | T   |      |          |          |         |             |           |          |
| b. "Deceitful confidence"   |        |               |          |           |                    |      |                     |        | T          |     |      |          |          |         |             |           |          |
| 3. Death of the Wolf  |        |               |          |           |                    |      |                     |        |            |     |      |          |          |         |             |           |          |
| 9. Running with wolves (trickster episodes)   | W      |               |          | W         | W                  | T    | T                   | T      |            |     |      |          | T        |         |             |           |          |
| 10. Premonitory warnings go unheeded and wolf is seized by underwater manitous        |        |               |          | ?         | T                  | T    | T                   | T      | T          |     |      |          | T        |         |             |           |          |

<sup>3</sup> Available Ottawa material is so slight that it has been omitted from the remaining tables. There is no available Algonquin deluge myth, so an Ottawa column here replaces Algonquin.

Table II. Culture-Hero Series (Cont.)

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Ottawa         | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|------|----------------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 11. Wolf returns as a ghost, is sent to spirit land                      |        |               |          |           |                    |      | t <sup>4</sup> | T      | T          |     | T    |          |          |         |             |           |          |
| 12. Hero is reconciled to the manitous by the gift of the medicine rites |        |               |          |           |                    |      | t <sup>4</sup> | T      | T          | t   |      |          |          |         |             |           |          |
| 4. Deluge  |        |               |          |           |                    |      |                |        |            |     |      |          |          |         |             |           |          |
| 13. Deluge is caused by hero's revenge for the death of wolf             |        |               |          |           | ?                  | T    | T              | T      |            | T   | T    |          | T        |         |             |           |          |
| 14. Earth diver and re-creation of earth                                 |        |               |          |           | ?                  | T    | T              | T      |            | T   | T    |          | T        | T       | T           | T         | T        |
| 15. Testing of earth's size  |        |               |          |           |                    | T    | T              | T      |            |     |      |          |          |         |             |           |          |

TABLE III. TRICKSTER TALES

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| A. TRICKSTER AS PERPETRATOR                        |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 1. Game caught by use of wits                      |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 1. Hoodwinked dancers                              | B      | W             | W        |           | W                  | T    | T         | T      | T          | T   | T    | T        | T        | T       | T           | T         | T        |
| 2. Geese are enticed into sack                     |        |               |          |           |                    |      |           |        | T          | T   |      |          |          |         |             |           |          |
| 3. Bear is blinded with berry juice                |        |               |          |           | W                  | T    | T         | T      |            |     |      |          |          |         |             |           |          |
| 4. Bear is killed in sweat bath                    |        | W             | W        |           | W <sup>2</sup>     | T    |           |        |            |     |      |          |          |         |             |           |          |
| 5. Bear is induced to back up to trapped trickster |        |               | R        |           | R                  |      |           |        |            |     |      |          |          |         |             |           |          |

<sup>4</sup> One version only (Hindley, in Chamberlain: 1891, pp. 200-201).<sup>1</sup> Grinnell gives one version which follows the usual pattern, but the more common Blackfoot version is divergent.<sup>2</sup> The older version, as recorded by Turner, makes Wolverine the Trickster.

Table III. Trickster Tales (Cont.)

|   | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Memonimi | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|---|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 6. Elk (buffalo) is tricked into jumping over precipice   |        |               |          |           | T <sup>3</sup>     |      |           |        |            |     |      |          | T        |         | T           |           |          |
| 7. Buffalolet trickster get near enough to stab them on pretext of settling a controversy       |        |               |          |           | T <sup>3</sup>     |      | T         |        |            |     |      |          |          |         |             |           |          |
| 8. One fish kills another as result of trickster's false talebearing                            |        |               |          |           |                    | M    |           |        |            |     |      | M        | T        |         |             |           |          |
| 2. Escape from danger through magic tricks  |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 9. Flight by metamorphosis  | H      | H             | H        | H         | +                  |      |           |        |            |     |      | H        |          |         |             |           |          |
| 10. Sound effects created to make enemy think trickster perished in trap, though safe elsewhere |        |               |          |           |                    |      |           | H      |            |     |      | H        |          |         |             |           |          |
| 11. Escape from boiling pot, scalding captor  | +      |               | F        | R         | Tc                 | Tc   | Tc        |        |            |     |      |          |          |         |             |           |          |
| 3. Incest by deception  |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 12. Trickster feigns death, marries his daughter <sup>4</sup>                                   |        |               |          |           |                    | T    |           | T      |            |     |      |          | T        | T       | T           |           |          |
| 13. Trickster changes identity, copulates with grandmother                                      |        |               |          |           |                    |      |           | T      |            |     |      |          |          |         |             |           |          |
| 4. Practical jokes  |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 14. Trickster kills young, leaves them propped up as if alive                                   |        | F             | H        | R         |                    | T    |           | T      |            |     |      |          | T        | T       | T           |           |          |
| 15. Dupe freezes tail, fishing through ice  |        |               |          |           |                    |      |           |        | +          | R   |      | R        |          |         | +           |           |          |

<sup>3</sup> Plains Cree only.<sup>4</sup> A widespread Plains tale. It has been made the subject of a separate study. See Schmerler, 1931.

Table III. Trickster Tales (Cont.)

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree           | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|----------------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 16. Buzzard's head is caught in rump                                     |        |               |          | T         | T X                | T <sup>5</sup> | T T       |        |            |     |      | X        |          |         |             |           |          |
| 17. Glued eyes <sup>6</sup>  |        |               |          | T         | T R R              |                |           |        |            |     | R    |          |          |         |             |           |          |
| 18. Animal is fed on dung  | +      | +             | +        |           |                    | +              |           |        |            |     |      |          |          |         |             |           |          |
| 19. Rabbit "cakes" and "wine"  | H      | H H           |          |           |                    |                |           |        |            |     |      |          |          |         |             |           |          |
| 20. Blind men are duped into fighting each other                         |        |               |          |           |                    | R              |           | T      |            | R   |      |          |          |         |             |           |          |
| 21. Women are induced to drown children, trying to make them mature fast |        | F             |          |           |                    |                | R         |        |            |     | R    |          |          |         |             |           |          |
| 22. Women are induced to ruin hand-work                                  | R      | H             |          |           |                    |                |           |        |            |     |      | R        |          |         |             |           |          |
| 23. Trickster marries chief's son, has a pretended baby                  | B W    |               |          | T         | T T                |                |           |        |            |     | T T  |          |          |         |             |           |          |

## B. THE TRICKSTER'S PRANK IS PAID BACK

|                                 |     |  |     |     |   |                |   |   |   |   |   |   |     |  |  |  |  |
|---------------------------------|-----|--|-----|-----|---|----------------|---|---|---|---|---|---|-----|--|--|--|--|
| 1. Little startlers             |     |  |     | T + | T | T <sup>7</sup> | T | T | T |   |   |   |     |  |  |  |  |
| 2. Race with stone <sup>8</sup> | B W |  | R W | T   | T |                |   |   |   | X | T | T | T X |  |  |  |  |

<sup>5</sup> Sauk version is woven into main cosmogonic myth.<sup>6</sup> In the Cree and Ojibwa versions the trickster is duped by Bear; in the Potawatomi, Fox and Menomini versions Raccoon glues Wolf's eyes.<sup>7</sup> Recorded by Jones, 1939. Michelson felt that this represented individual rather than tribal knowledge as he tried repeatedly to get this tale without success.<sup>8</sup> The eastern versions (Micmac, Passamaquoddy, Penobscot, Montagnais-Naskapi, Algonquin, and Woodland Cree) have the race occur as the result of a taunting challenge to the rock. The Plains Cree, Arapaho, Gros Ventre, and Blackfoot versions have it follow the reclaiming of a robe previously given to the rock. The Cheyenne version has no race. The myth has been assimilated to the "abuse of power" theme. The trickster had been given the power to turn stones over by verbal command four times. The fifth time the stone rolled on him.

Table III. Trickster Tales (Cont.)

|                               | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|-------------------------------|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 3. Virgins, tricked,          |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| a. wear out the trickster     |        |               | T        |           |                    |      | T         |        |            |     |      |          |          |         |             |           |          |
| b. are appropriated by others |        |               |          |           |                    |      | T         |        |            |     |      |          |          | X       | T           |           |          |

## C. TRICKSTER AS DUPE

|  |   |   |   |   |                |   |   |   |   |   |   |   |   |  |   |  |  |
|--|---|---|---|---|----------------|---|---|---|---|---|---|---|---|--|---|--|--|
| 1. Screech-owl frightens trickster into abandoning provisions                          |   |   |   |   |                |   | T |   |   |   |   | T |   |  |   |  |  |
| 2. Trickster begs ride, is dropped from height   |   |   | T |   |                | T | T |   | T | T | T |   |   |  |   |  |  |
| 3. Stones tied to intestines by Fisher   |   |   | T |   | T <sup>9</sup> | R | R |   |   |   |   | T |   |  | T |  |  |
| 4. Quarry escapes by reminding trickster of harm to pelt in various methods of killing |   |   | T |   |                |   |   |   |   |   |   |   | T |  | T |  |  |
| 5. "Dead" animal is only sleeping  |   | T | T |   |                |   |   | T |   |   |   |   |   |  |   |  |  |
| 6. Muskrat cools grease  | W | W |   | T | T              |   |   |   |   |   |   |   |   |  |   |  |  |
| 7. Tree holders  |   |   | T | T | T              | T |   | T | T | T | T |   |   |  | T |  |  |
| 8. Rushes are taken for dancing Indians  |   |   |   |   | T              |   |   |   |   |   |   | T |   |  |   |  |  |
| 9. Rotten-log hoax <sup>10</sup>   | B | W |   | + | +              | + | + | + | + | + | + | + |   |  | + |  |  |

<sup>9</sup> One divergent Ojibwa version, recorded by Jones, 1917, pp. 193-197, makes of this an astral myth pertaining to the movements of the Great Dipper, whom Nanabozho is forced to acknowledge as an older manitou than himself. This identification of the Fisher with the Great Dipper also holds for the Montagnais-Naskapi, Algonquin, and Menomini.

<sup>10</sup> Usually associated with the Star-husband sequence, but not always in the same way. It also occurs independently.

Table III. Trickster Tales (Cont.)

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| <b>D. TRICKSTER'S PLIGHT THE RESULT OF HIS OWN ACTIONS</b> |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 1. Dives for reflections                                   |        |               |          |           |                    | T    | T         |        |            | T   | T    | T        | T        | T       | T           | T         | T        |
| 2. Attacks bear with wooden weapons                        |        |               |          | T         |                    |      |           |        |            |     |      |          |          |         | T           |           |          |
| 3. Head caught in skull <sup>11</sup>                      |        |               |          |           | T                  | T    | T         |        |            |     |      |          |          | T       | T           | T         |          |
| 4. Theft-proof objects                                     |        |               |          |           | T                  |      |           |        | T          | T   |      |          |          |         |             | T         | T        |
| 5. Little bird with large arrow <sup>12</sup>              |        |               |          |           | T                  |      |           |        |            |     |      |          |          | T       | T           | X         |          |
| 6. Watching anus is burned                                 |        |               |          |           | T                  | T    | T         | T      | T          |     | T    | T        | T        | T       | T           | T         | T        |
| 7. Noisy rump  |        |               |          |           | T                  | T    | T         |        | T          |     |      | T        |          | T       | T           |           |          |
| 8. Faecal lake   |        |               |          |           | T                  |      |           |        | T          |     |      | T        | T        | T       |             |           |          |
| 9. Looks down while flying                                 |        |               |          |           | T                  |      | T         |        |            |     |      | T        |          |         | T           |           |          |
| 10. Power lost through abuse <sup>13</sup>                 |        |               |          |           | T                  |      |           | T      |            |     |      |          | T        | T       | T           | T         |          |
| a. Eye juggler   |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| b. Lighting fire by jumping over wood                      | W      | W             |          | W         | W                  |      | T         |        |            |     |      |          |          |         |             |           |          |
| c. Skunk power   |        |               |          |           | X                  |      | T         |        | T          | T   | T    | T        |          |         |             |           |          |
| 11. Bungling host <sup>14</sup>                            |        |               |          | H         |                    |      |           |        | T          |     |      |          |          |         |             | T         |          |
| a. Meat from self (bear, caribou)                          |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |

<sup>11</sup> In the Algonquin, Woodland Cree, and usual Ojibwa versions the trickster transforms himself into a snake to get what meat is in the skull, and his head is transformed back again before he takes it out. In the Plains Cree, Arapaho, Gros Ventre, and Blackfoot versions he gets his head caught watching mice do a sun dance in the skull. An echo of this version exists in one Ojibwa variant reported by Jones, 1917 pp. 419-421, in which the Trickster sees mice go into the skull, asks to be made one, but only his head was transformed, and he could not get that out.

<sup>12</sup> This myth might possibly be an obscure reference to Tcikapis.

<sup>13</sup> The "abuse of power" theme is mechanically defined on the Plains, functionally defined in Eastern versions. See discussion of this theme in the text.

<sup>14</sup> The Bungling Host motif is strongly developed in Ojibwa, very weakly in Cree. One single instance only is reported, Bloomfield, 1934.

Table III. Trickster Tales (Cont.)

|   | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini        | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|---|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|-----------------|---------|-------------|-----------|----------|
| b. Grubs from pole (Wood-pecker)          | H      |               | H        |           |                    | T    |           |        |            |     |      | T        |                 |         |             |           |          |
| c. Fish or eels (otter)                   | H      |               |          |           |                    |      |           |        |            |     |      |          |                 |         |             |           |          |
| d. Meat from wife (moose, elk)            |        |               |          |           |                    |      | T         |        | T          |     |      |          | T               |         |             |           | T        |
| e. Food from dung (duck, gull)            |        |               |          |           |                    | T    | T         |        | F          |     |      |          |                 |         |             |           |          |
| f. Spearing fish (blue jay, king-fisher)  |        |               | W        | H         |                    |      |           |        |            | T   | T    | T        |                 |         |             |           |          |
| g. Child's bones thrown in water (beaver) |        |               |          |           |                    |      |           |        |            |     |      |          | T <sup>15</sup> | T       | T           |           |          |
| h. Grease from testicles (squirrel)       |        |               |          |           |                    |      | T         |        |            |     |      |          |                 |         |             |           | T        |
| i. Potatoes from ice (muskrat)            |        |               |          |           |                    |      |           | +      |            |     |      |          |                 |         |             |           |          |
| j. Bark chips into fish (beaver)          |        |               |          |           |                    |      |           | T      |            |     |      |          |                 |         |             |           |          |

## E. MARGINAL TRICKSTER PLOTS

|  |   |  |   |   |   |   |   |  |   |  |  |  |  |  |  |   |
|--|---|--|---|---|---|---|---|--|---|--|--|--|--|--|--|---|
| 1. Hero marks birches <sup>16</sup>        | + |  | - | T | T | T | T |  |   |  |  |  |  |  |  | T |
| 2. Animals are dipped in fat <sup>17</sup> |   |  |   |   | T | T |   |  | T |  |  |  |  |  |  | T |

<sup>15</sup> Jones notes that this is the only case in Fox mythology where the culture-hero was known to have a wife and child.

<sup>16</sup> In the Micmac, Montagnais-Naskapi, Montagnais and easternmost Cree versions, the culture-hero marked up the birches so that good wood would not be too easy to get. In the Blackfoot, Ojibwa, and remaining Cree versions it was done as a petulant sort of revenge on the trees. This would seem to set an eastern as against a western version, except that one Wabanaki version (Wawenock) has Gluskabe switching the tree because it nearly fell on him when he cut it down. One Blackfoot version considers the markings ornamental, and a reward.

<sup>17</sup> The temper of this myth is usually serious but an Ojibwa version (*Timagami*) turns it into a joke on the Trickster, rather than a part of his regulation of the world.

Table III. Trickster Tales (Cont.)

|   | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|---|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 3. Hero is rescued from cannibal <sup>18</sup>  | +      | +             |          |           | T                  |      | T         |        |            |     |      |          |          |         |             |           |          |
| 4. Partridge winters in snowdrift <sup>19</sup> | +      | +             |          |           | T                  |      |           |        |            |     |      |          |          |         |             |           |          |
| 5. Hero is conquered by baby <sup>20</sup>      |        |               | T        |           |                    |      | T         |        |            |     |      | T        |          |         |             |           |          |

TABLE IV. PHALLIC TALES

|                                  |   |   |                |   |   |  |   |   |   |   |   |   |   |   |   |   |  |
|----------------------------------|---|---|----------------|---|---|--|---|---|---|---|---|---|---|---|---|---|--|
| 1. Talking privates <sup>1</sup> | X | X |                |   |   |  |   |   |   |   |   |   |   |   |   |   |  |
| 2. Toothed vagina                |   |   | -              | + |   |  |   | + |   |   |   |   |   |   |   |   |  |
| 3. Vulva-wound                   |   |   | +              | + | + |  |   |   |   |   |   |   |   |   |   | + |  |
| 4. Long-distance copulation      | W | P | T <sup>2</sup> |   | T |  | T |   | T | T | T | T | T | T | T | T |  |

<sup>18</sup> In the Wabanaki versions Sable was in the power of a Snake which planned to roast him, and sent him for a straight stick to be used as a spit. Gluskabe came along, advised Sable to take a crooked stick, and then offered to straighten it in the fire. When it was glowing he was to turn on Snake and chase him to where Gluskabe would be lying in wait. One Malecite version (Speck 1910) follows the familiar pattern but is told of Mink and his elder brother Fisher.

In the Ojibwa versions, the Trickster has been intimidated by a cannibal and sent for a straight stick. He was saved by a weasel which he induced to jump into the cannibal's body and bite the heart string.

The Cree versions are similar to the Ojibwa but add an echo from another serious myth, the one in which a woman tamed a giant cannibal by calling him "father" and treating him with kindness. In these Cree versions the Trickster called out, "Father, Father!" One of the two versions had him congratulate himself for his cleverness in fooling the cannibal (who was not fooled), but the narrator in the other version (Michelson, unpublished) interpreted it to mean that he was calling on his father for aid against the cannibal, and commented that this was the only time Wisakedjak had ever been known to call on his father.

<sup>19</sup> Partridge winters in snowdrift. The Passamaquoddy version is an allegorical account of how a partridge spends the winter. The Malecite version is close in many details, but adds a trickster touch to the allegory. In the Cree version a deliberate trick was played on Wisakedjak by the partridge people, and the allegory is lost.

<sup>20</sup> Hero is conquered by baby. Two Penobscot versions have been reported: Leland's, in which Gluskabe could not persuade a baby to come to him, although he tried first smiles, then commands, and finally magic spells; and Speck's, in which Gluskabe undertook to do everything the baby did, but was finally defeated when the baby ate his own excrement. In a Saulteaux version Wisakedjak kept up with the baby until the latter put his foot behind his neck. The Menomini version has to do with eating excrement but lacks the humor of the Penobscot tale.

<sup>1</sup> This is also told by the Sisseton, Crow, Assiniboine, Pawnee, and Kiowa, in form comparable to the Ojibwa version.

<sup>2</sup> Plains Cree only.

TABLE V. CANNIBAL TALES

|  | Micmac | Pasamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|--------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 1. Cannibal giant is tamed by woman's kindness                                     | +      | +            | +        |           |                    |      |           |        | +          |     |      |          |          | +       |             |           |          |
| 2. Sorceror uses guile to overcome cannibal while chiseling beaver                 |        |              |          | +         | +                  |      |           | +      |            |     |      |          |          |         |             |           |          |
| 3. Cannibal giants are overcome easily by reason of their stupidity                | +      |              |          | +         | +                  |      |           |        |            |     |      |          |          |         |             |           |          |
| 4. Berserk woman is finally killed by wounds in little toe, where heart was placed |        |              |          |           |                    | +    | +         |        |            |     |      |          |          | +       | +           | +         |          |

TABLE VI. TALES OF ADVENTURE

## A. FAVORITE PLOTS

|   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|--|---|---|---|---|---|---|---|---|---|---|
| 1. Magic flight from rolling skull  |   |   |   |   | T | + |  | + |   | + | + | + | + | + | + | + | + |
| 2. Old man in magic canoe kidnaps elder of two brothers. The younger brother turns into a wolf  |   |   |   |   | T | + |  |   |   |   |   |   | + |   |   |   |   |
| 3. Hero, deserted on island, arrives home safely through magical means<br>(Potiphar motivation) | + | + | + | + | T | + |  |   |   |   | + | + |   |   | X | + |   |
| 4. Abandoned children, surreptitiously befriended, eventually triumph                           | + |   |   |   |   |   |  |   |   |   |   |   | + | + | + | + | + |
| 5. Boy with magic ball overcomes evil magician by locating his heart on distant island          |   |   |   |   |   |   |  | + | + |   |   |   |   |   |   |   |   |

<sup>1</sup> Two out of three Ojibwa versions missed the point of the Potiphar motivation, and had the youth deliberately scratch the woman's thighs.

Table VI. Tales of Adventure (Cont.)

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 6. Star husbands <sup>2</sup>  | +      | +             |          |           |                    |      |           | +      |            |     |      |          |          | +       |             | +         |          |
| 7. Sun-child <sup>2</sup>  |        |               |          |           |                    | +    |           |        |            |     |      |          |          | +       | +           |           |          |
| 8. Blood-clot Boy  |        |               |          |           | +                  | +    |           |        |            |     |      |          |          | +       | +           | +         | +        |
| 9. Lodge-Boy and Thrown-Away <sup>2</sup>  | +      |               |          | +         |                    |      | +         |        |            | +   | +    | +        | +        | +       | +           | +         |          |
| 10. Hero loses wrestling match with hunchback, is forced to trade appearances, regains own form through sweat bath   |        |               |          |           |                    |      |           | +      |            |     |      |          |          |         |             |           |          |
| 11. The ten brothers and the "swan" wife   |        |               |          |           |                    |      |           | +      |            |     |      |          |          |         | +           |           |          |
| 12. Villain impounds water, insults hero with filthy water, is overcome, water released  | +      | +             | +        | +         |                    |      |           | +      |            |     |      |          |          |         |             |           | X        |
| 13. Two Indians camp together. One breaks agreement on sharing fish. The badly treated one is aided magically. The other, disobeying injunction, gets his just deserts |        |               |          |           |                    |      |           |        | +          |     |      |          | +        |         |             |           |          |
| 14. Girl "insults" old bones, is pursued by sucking monster  | +      |               |          |           |                    |      |           |        |            |     |      |          | +        |         |             |           |          |
| 15. Toad-Woman steals child, who grows up magically. Real mother establishes identity, gets child back   |        |               |          |           |                    | +    | +         | +      |            |     |      |          |          |         |             |           |          |

## B. RECURRING PLOT ELEMENTS

|   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 1. Hero survives attack on life<br>a. Tossed out of canoe | + |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

<sup>2</sup> See Reichard (JAFL 34: 269-307; 1921) for complete analysis of this myth.

Table VI. Tales of Adventure (Cont.)

|   | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|---|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| b. Clothes burned                             |        |               |          |           |                    |      |           |        |            |     |      |          |          |         | +           |           |          |
| c. Precipice swing                            |        |               |          | +         |                    |      |           | +      |            |     |      |          |          |         |             | +         |          |
| d. Toboggan ride                              | +      |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 2. Hero dupes adversaries                     |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| a. Awl-elbow witches                          | +      |               |          |           |                    |      |           |        | +          |     |      |          |          |         | +           |           |          |
| b. Cranberries substituted for poisonous lice |        | +             |          |           |                    |      |           |        |            |     |      |          |          |         | +           |           |          |
| 3. Hero wins contest                          |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| a. Endurance of cold                          | +      |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| b. Smoking contest                            |        | +             | +        |           |                    |      |           |        |            |     | Tc   |          |          |         |             |           |          |
| c. Wrestling match                            | +      |               | +        | +         |                    |      |           | +      |            |     | +    |          |          |         |             |           |          |
| d. Ball game                                  | +      |               | +        | +         |                    |      |           | +      |            |     |      |          |          |         |             |           |          |
| 4. Urine paternity test                       |        |               |          | +         | +                  |      | +         | +      | +          |     |      |          |          | +       |             |           |          |
| 5. Crane bridge                               | +      |               |          | +         |                    |      | +         | +      |            |     |      |          |          | -       | -           | X         |          |

## TABLE VII. TALES OF PASSION

Table VII. Tales of Passion (Cont.)

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 3. Jealous mother-in-law lures son's wife to precipice swing, puts on girl's clothes, but is found out. Girl rescued from water-monster when returning to nurse child <sup>1</sup> |        |               |          |           |                    |      |           | +      | +          |     |      |          | +        | -       |             |           |          |
| 4. Girl, too proud to marry, is punished by falling in love with dung-man  |        |               |          |           |                    |      |           | +      |            |     |      |          | +        |         |             | +         |          |
| 5. Adultery through hole in wigwam   | +      | +             |          |           |                    |      | +         | +      | +          |     |      | +        |          |         |             |           |          |
| 6. Bear lover is killed, crammed down wife's throat <sup>2</sup>   | +      | +             |          |           |                    |      | +         |        | +          | +   | +    | +        |          |         |             |           |          |
| 7. Snake lovers are destroyed, wife is made to eat them, later killed  |        |               |          |           |                    |      | +         | +      |            |     |      | -        | -        | +       | +           |           |          |

TABLE VIII. ANIMAL TALES

|                                      |   |  |    |   |    |   |    |  |  |  |  |  |   |    |  |    |    |
|--------------------------------------|---|--|----|---|----|---|----|--|--|--|--|--|---|----|--|----|----|
| 1. Snapping turtle's war party       |   |  |    |   | ++ |   | ++ |  |  |  |  |  |   |    |  | ++ | ++ |
| 2. Turtle wins a race                |   |  |    |   |    |   | ++ |  |  |  |  |  |   |    |  | +  |    |
| 3. The killing of Big-Skunk          |   |  | WW |   |    | F |    |  |  |  |  |  |   |    |  |    |    |
| 4. Diver-Duck impersonates Loon      | + |  |    | + |    | + |    |  |  |  |  |  | + |    |  | +  |    |
| 5. Diver-Duck overcomes Winter-Maker |   |  |    |   |    | + |    |  |  |  |  |  |   | +  |  |    |    |
| 6. Theft of summer                   | + |  | +  |   | +  |   |    |  |  |  |  |  |   | ++ |  |    |    |
| a. Length of winter settled          |   |  |    |   |    | + |    |  |  |  |  |  |   |    |  |    |    |

<sup>1</sup> Plot erroneously given as Cree by both Waterman and Thompson. The Cree reference is to a precipice swing in another context.

<sup>2</sup> In the Wabanaki versions, wife eats it all, showing her manitou power. In the Western versions she is killed by having it forced down her throat.

Table VIII. Animal Tales (Cont.)

|  | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|--|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| b. Fisher becomes Great Dipper                   |        |               |          |           | +                  |      |           | +      |            |     |      |          |          |         |             |           |          |
| 7. Ground-Hog deceives her children about summer |        |               |          | +         |                    |      |           | +      |            |     |      |          |          |         |             |           |          |
| 8. Wolf breaks Otter's air holes                 |        |               |          |           |                    | +    |           |        |            |     |      |          |          |         |             |           |          |
| a. Otter dies, offer to marry Wolf refused       |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| b. Wolf forces Otter to marry                    |        |               |          |           | +                  |      |           |        |            |     |      |          |          |         |             |           |          |
| 9. Catfish kills Moose                           |        |               |          |           |                    | +    |           |        |            |     | +    |          | +        |         |             |           |          |
| 10. Animal is thrown in own element              |        |               |          |           |                    | +    |           |        |            |     |      |          | +        |         |             |           |          |
| a. Rabbit in brambles                            |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| b. Turtle into water                             | +      | +             | +        | +         |                    |      | +         |        |            |     |      |          |          |         |             | +         |          |
| 11. Raccoon kills Crawfish                       |        |               |          |           |                    |      |           | +      | +          | +   | +    | +        | +        |         |             |           |          |

TABLE IX. ANIMALS IN THEIR RELATIONS TO HUMANS

## A. MARRIAGES

|                    |   |   |   |   |  |   |  |  |   |   |  |  |   |   |   |    |    |
|--------------------|---|---|---|---|--|---|--|--|---|---|--|--|---|---|---|----|----|
| 1. Snake lovers    | + |   |   |   |  |   |  |  |   |   |  |  |   |   |   |    | ++ |
| 2. Snake offspring | + | + |   |   |  |   |  |  |   |   |  |  |   |   |   |    |    |
| 3. Bear lovers     | + |   | + |   |  | + |  |  |   | + |  |  | + | + | + | +  |    |
| 4. Bear husband    |   |   |   |   |  |   |  |  |   | + |  |  |   |   |   |    | +  |
| 5. Beaver husband  |   |   |   |   |  |   |  |  | + |   |  |  |   |   |   |    |    |
| 6. Dog husband     |   |   |   | + |  |   |  |  |   | + |  |  | + | + | + | ++ |    |

Table IX. Animals in Their Relations to Humans (Cont.)

|                            | Micmac | Passamaquoddy | Malecite | Penobscot | Montagnais-Naskapi | Cree | Algonquin | Ojibwa | Potawatomi | Fox | Sauk | Kickapoo | Menomini | Arapaho | Gros Ventre | Blackfoot | Cheyenne |
|----------------------------|--------|---------------|----------|-----------|--------------------|------|-----------|--------|------------|-----|------|----------|----------|---------|-------------|-----------|----------|
| 7. Bear wife               |        | +             |          |           |                    | +    |           |        |            |     |      |          | +        |         |             |           |          |
| 8. Beaver wife             | +      |               |          | +         |                    |      |           | +      |            |     |      |          | +        |         |             |           |          |
| 9. Deer wife               |        | +             | +        | +         |                    |      |           |        |            |     |      |          | +        |         |             |           |          |
| 10. Dog wife               |        |               |          | +         |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| B. ANIMAL ABDUCTORS        |        |               |          |           |                    |      |           |        |            |     |      |          |          |         |             |           |          |
| 1. Eagle, or mythical bird | +      | +             | +        | +         | +                  | +    | +         | +      | +          |     |      |          | +        | +       | +           | +         | +        |
| 2. Bear                    | +      | 1             | +        | +         | +                  | +    | +         | +      | +          |     |      |          | +        | +       | +           | +         | +        |

<sup>1</sup> Dr. Parsons' Micmac informant said this tale was told to frighten children, to keep them from straying from camp.

<sup>2</sup> Dr. Speck says this tale is not found among most Montagnais bands.

BERKELEY, CALIFORNIA

## BIBLIOGRAPHY

The following bibliography is first of all a list of the sources from which the material for this study was obtained. However, there are many pitfalls in the way of the utilization of Algonkian sources, and part of the writer's task has been to annotate these sources. In addition to linguistic difficulties and related problems of provenience and authenticity, there are further difficulties arising from the mainly religious or literary nature of the interests of many of the earlier writers. Some expurgated the legendary material, others reshaped it to suit their own tastes, and light-hearted borrowings from various sources were common. The present writer has attempted to unsnarl this tangle where possible, and has noted the provenience and approximate date of recording of the various collections.

Cree sources present especial difficulties, and in this field I have relied heavily on the invaluable assistance given me during the compilation of the Cree Concordance by Rev. John M. Cooper and the late Dr. Truman Michelson. On Dr. Michelson's advice (his conclusions have since that time

been set forth in detail; see the list of selected references) all tales known to come from the east side of James Bay, using the Harricanaw River as a dividing line, have been classified as Montagnais rather than Cree, with the exception of the isolated Tête-de-Boule.

In the Wabanaki field the writer owes much to Dr. Frank G. Speck.

#### ABBREVIATIONS USED

|                 |  |
|-----------------|--|
| AA.....         | American Anthropologist  |
| AES-P.....      | Publications of the American Ethnological Society  |
| AFLS-M.....     | American Folklore Society, Memoirs.  |
| AMNH-AP.....    | Anthropological Papers of the American Museum of Natural History                               |
| BAE-B.....      | Bureau of American Ethnology, Bulletin.  |
| BAE-R.....      | Annual Report of the Bureau of American Ethnology  |
| CGS-M.....      | Canada. Geological Survey. Memoir.   |
| ICA-P.....      | Proceedings of the International Congress of Americans   |
| JAFL.....       | Journal of American Folklore   |
| VKAW Amsterdam. | Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam. Afdeeling Letterkunde. |

#### MICMAC

- ELDER, WILLIAM. "The Aborigines of Nova Scotia," *North American Review*, CXII, pp. 1-30; 1871. (The legends given here were all obtained from Rand.)
- FAUSSET, ARTHUR H. "Folklore from the Half-Breeds in Nova Scotia," *JAFL* 38: 300-315; 1925. (Collected in 1923.)
- HAGAR, STANSBURY. "Micmac Customs and Traditions," *AA* 8: 31-42; 1895.
- HAGAR, STANSBURY. "Micmac Magic and Medicine," *JAFL* 9: 170-177; 1896.
- HAGAR, STANSBURY. "The Celestial Bear," *JAFL* 49: 92-103; 1900.
- LE CLERCQ, CHRESTIEN. "New Relation of Gaspesia" (Ganong edition). Champlain Society Publications, 19: 84-86 (French text pp. 36-37); 1910. (LeClercq gives brief and fragmentary mention to a creation and deluge myth, obtained presumably 1675-1687.)
- LELAND, CHARLES G. (See Passamaquoddy list.)
- MECHLING, W. H. "Malecite Tales," *CGS-M* 49; 1914. (This also contains a few Micmac Tales.)
- MICHELSON, TRUMAN. "Micmac Tales," *JAFL* 38: 33-54; 1925. (Collected in 1910.)
- PARSONS, ELSIE CLEWS. "Micmac Folklore," *JAFL* 38: 55-133; 1925. (Collected in 1923.)
- PRINCE, JOHN D. "A Micmac Manuscript," *ICA-P*, Quebec: 87-124; 1906. (This manuscript was written in Indian-English by a Micmac Indian, for Stansbury Hagar, just when is not stated.)
- RAND, SILAS T. "Legends of the Micmacs," N. Y. and London, 1894. (The first of these legends was taken down in 1847. Others are dated in the early 1870's. Rand died in 1889. Several

of these legends were published earlier, but since they have all been collected here the scattered references have been omitted.)

SPECK, FRANK G. "Some Micmac Tales From Cape Breton Island," JAFL 28: 59-69; 1915.

### PASSAMAQUODDY

BROWN, MRS. W. WALLACE. "Wa ba ba nal, or Northern Lights," JAFL 3: 213-214; 1890. (This is called a Wabanaki legend. It is probably to be ascribed to the Passamaquoddy branch of the Wabanaki, since Mrs. Brown was most intimately associated with that tribe.)

FEWKES, J. H. "A Contribution to Passamaquoddy Folklore," JAFL 3: 257-280; 1890.

LELAND, CHARLES G. "Algonquin Legends of New England," 1884. (This book can be used as a Passamaquoddy source. Leland drew on Mrs. W. Wallace Brown, and on manuscripts obtained from Passamaquoddy Indians. It contains a few Penobscot legends, obtained from Miss Abby Alger. The book should not be used as a Micmac source. I have checked all the legends Leland gives as Micmac, and with one exception they all came from Rand. That one Leland notes as coming from Edward Jack, who published it as Malecite.)

LELAND, CHARLES G., and JOHN D. PRINCE. "Kuloskap the Master," 1902. (This book is a poetical reworking of composites of the legends appearing in Algonquin Legends of New England.)

PRINCE, JOHN D. "The Passamaquoddy Wampum Records." Proc. of the Amer. Philosophical Soc. 36: 479-495; 1897. (These wampum records also appear in "Kuloskap the Master.")

PRINCE, JOHN D. "Some Passamaquoddy Witchcraft Tales," Proc. Amer. Philosophical Soc. 38: 181-189; 1900. (This material was utilized by Leland, but here appears with linguistic notes.)

PRINCE, JOHN D. "Passamaquoddy Texts," AES-P 10; 1921. (Except for the wampum records mentioned above, and also appearing here, all of this material was in a manuscript by Lewis Mitchell, an educated Passamaquoddy. This manuscript came into Prince's possession, and was destroyed by fire in 1911 and later reproduced from memory by Lewis Mitchell. The original Mitchell manuscript was one of those utilized by Leland in writing his "Algonquin Legends.")

READE, JOHN. "Some Wabanaki Songs," Trans. Royal Soc. Canada, Section II: 1-8; 1887. (Two Passamaquoddy love songs, one embedded in a tale, both obtained with text, from Mrs. W. Wallace Brown.)

### MALECITE

JACK, EDWARD. "The Abenakis of St. John's River," Trans. Canadian Inst., 3: 195-205; 1891-1892. (Malecite material. The mythology given here appears also, with additions, in JAFL 8, 1895).

JACK, EDWARD. "Maliseet Legends," JAFL 8: 193-208; 1895.

MECHLING, W. H. "Malecite Tales," CGS-M 49; 1914. (Collected 1910-1912.)

PRINCE, JOHN D. "A Passamaquoddy Aviator," AA 11: 628-650; 1919. (Text and translation. The text was written by a Passamaquoddy, but the narrator of the tale was a Malecite. Prince obtained this in 1902.)

SPECK, FRANK G. "An Algonkian Myth," Univ. Penn. Museum Journal 1: 49-52; 1910.

SPECK, FRANK G. "Malecite Tales," JAFL 30: 479-485; 1917.

STAMP, HARLEY. "A Malecite Tale," JAFL 28: 243-248; 1915.

### PENOBCOT

- ALGER, ABBY L. "The Creation," Popular Science Monthly 44: 195-196; 1893. (Two tales about Gluskabe. Speck has given both of these in full, JAFL 48: page 9, and page 40, footnote 1.)
- ECKSTORM, FANNIE H. "Katahdin Legends," Appalachia, December 1924.
- LELAND, CHARLES G. (See Passamaquoddy list.)
- NICOLAR, JOSEPH. "The Life and Traditions of the Red Man," Bangor, 1893. (Esoteric versions of Penobscot myths, mingled with what seems to be a strong admixture of Indianized Catholicism. See Speck's comment on this author, JAFL 48: 6, footnote 1.)
- SPECK, FRANK G. "Penobscot Tales," JAFL 28: 52-58; 1915.
- SPECK, FRANK G. "Penobscot Transformer Tales," International Journal of American Linguistics I: No. 3; 1918. (Texts and translations. All of these versions appear in JAFL 48.)
- SPECK, FRANK G. "Penobscot Shamanism," Memoirs of the American Anthropological Association 6: No. 3; 1920.
- SPECK, FRANK G. "Penobscot Tales and Religious Beliefs," JAFL 48: 1-107; 1935. (This collection is complete, including versions published in the earlier references.)
- STAMP, HARLEY. "The Water-Fairies," JAFL 28: 310-316; 1915. (The author traces this story back to 1833.)

### WAWENOCK

- SPECK, FRANK G. "Wawenock Myth Texts From Maine," BAE-R 43: 169-197; 1928.

### ABENAKI (ST. FRANCIS)

- DEMING, MRS. E. W. "Abenaki Witchcraft Story," JAFL 15: 62-63; 1902. (Another version of Harrington's story, by the mother of Harrington's informant.)
- HALLOWELL, A. IRVING. Manuscript. (Dr. Hallowell informs me that he was unable to find any St. Francis Abenaki who knew the Gluskabe myths.)
- HARRINGTON, M. RAYMOND. "An Abenaki 'Witch Story,'" JAFL 14: 160; 1901.
- VETROMILE, REVEREND EUGENE. "The Abenakis and Their History," N. Y., 1866. (Leland discusses Vetromile's version of the Katahdin story in "Algonquin Legends," pp. 257 and 258.)

### MONTAGNAIS-NASKAPI

- BELL, R. "History of the Che-che-puy-ew-tis," JAFL 10: 1-8; 1897. (The legend is called Cree, and it is known to the Cree, but this particular version, being from Rupert's House, must be considered Montagnais.)
- LE JEUNE. Jesuit Relations, Thwaites edition, 5: 155-157; 6: 157-159. (Earth diver) 12: 31-37 (Tcikapis) (Speck expresses doubts as to the authenticity of Le Jeune's earth-diver reference. JAFL 38: 2.)
- SKINNER, ALANSON B. Notes on the Eastern Cree and Northern Saulteaux, AMNH-AP Part 1: 9; 1911. (This also contains Montagnais versions from Rupert's House.)
- SPECK, FRANK G. "Myths From Little Whale River," JAFL 28: 70-77; 1915.
- SPECK, FRANK G. "Montagnais and Naskapi Tales from the Labrador Peninsula," JAFL 38: 1-32; 1925.
- SPECK, FRANK G. "Naskapi. The Savage Hunters of the Labrador Peninsula." Univ. Okla. Press, 1935. (See pages 24-25 for bibliographic notes on the Montagnais-Naskapi.)

- STRONG, W. DUNCAN. Manuscript. (Naskapi folklore from the Barren Ground, Davis Inlet, and White Whale River Bands.)
- SWINDELEURST, FRED. "Folklore of the Cree Indians," JAFL 18: 139-143; 1905. (Father Cooper felt that these tales should probably be considered Montagnais rather than Cree. This would bring the earth-diver myth into the Montagnais column. In view of the element of doubt, these tales have not been utilized in the comparative table.)
- TURNER, LUCIEN M. "Ethnology of the Ungava District," BAE-R 11; 1889-1890.

### CREE

- AHENAKEW, E. "Cree Trickster Tales," JAFL 42: 309-353; 1929. (Apparently Thunderchild Reservation, Saskatchewan).
- BELL, R. (See Montagnais-Naskapi list.)
- BLOOMFIELD, LEONARD. "Sacred Stories of the Sweet Grass Cree," Canada, Department of Mines, Anthropological Series No. 11, Ottawa, 1930. (Sweet Grass Reservation, Saskatchewan, 1925.)
- BLOOMFIELD, LEONARD. "Plains Cree Texts," AES-P 16; 1934. (Sweet Grass Reservation, Saskatchewan, 1925.)
- CLAY, C. "Swampy Cree Legends," 95 pp. Toronto, 1938. (Listed by Murdoch but not available to the writer.)
- CRESSWELL, J. R. "Folk-Tales of the Swampy Cree of Northern Manitoba," JAFL 36: 404-406; 1923. (Norway House, Manitoba.)
- DAVIDSON, D. S. "Some Tête-de-Boule Tales," JAFL 41: 262-274; 1928. (Quebec, 1925.)
- FISHER, MARGARET W. (See Welpley, Margaret.)
- GORDON, CHARLES H. M. "How Chekapash Snared the Sun," The Beaver, September 1925. (I am indebted to Dr. Hallowell for this reference.)
- HALLOWELL, A. IRVING. "Saulteaux Mythology," unpublished. (This contains also a few Cree variants of interest.)
- HORDEN, J. "A Grammar of the Cree Language," London, 1881. (Moose Factory, Ontario.)
- MACLEAN, J. "Canadian Savage Folk," Toronto, 1896. (Pp. 71-76. Told on a boat on the Saskatchewan River.)
- MICHELSON, TRUMAN. Manuscript. (File Hills Reserve, Saskatchewan, 1910.)
- PAGET, A. M. "The People of the Plains," Toronto, 1909. (Manitoba and Saskatchewan.)
- PETITOT, E. "Traditions Indiennes du Canada Nord-Ouest," Paris, 1886.
- PRUD'HOMME, L. A. "Carmel, Une Légende de la Tribu des Cris." Royal Society of Canada, Proc. and Trans., 3rd ser., vol. 13, sec. I: 95-100; 1919. (Probably Saskatchewan.)
- RUSSELL, FRANK. "Explorations in the Far North," Iowa University, 1898. (Grand Rapids, Manitoba, 1892-1894. The author omitted "the mass of exceedingly vulgar material.")
- SIMMS, S. C. (See Ojibwa list.)
- SKINNER, ALANSON B. "Plains Cree Tales," JAFL 29: 341-367; 1916 (Saskatchewan, 1913).
- SKINNER, ALANSON B. "Notes on the Eastern Cree and Northern Saulteaux," AMNH-AP 9: Part I; 1911. (This also contains Montagnais versions from Rupert's House.)
- SWINDELEURST, FRED. (See Montagnais-Naskapi list.)
- TEIT, J. "Plains Cree Tales," JAFL 34: 320-321; 1921.
- WELPLEY, MARGARET N. "A Concordance to Cree Mythology," Thesis, George Washington University, 1932.

## ALGONQUIN

- DAVIDSON, D. S. "Folk Tales from Grand Lake Victoria, Quebec," JAFL 41: 275-292; 1928.  
 RADIN, PAUL. (See Radin, CGS-M 48, in Ojibwa list.)  
 SPECK, FRANK G. "Myths and Folklore of the Timiskaming Algonquin," CGS-M 71: 1-26; 1915.

## OTTAWA

- ASSIKINACK, FRANCIS. "Legends and Traditions of the Odawah Indians," Canadian Journal, Series 2, 3: 115-125; 1858. (Mythology limited to deluge story, pp. 123-125.)  
 BLACKBIRD, A. J. In Chamberlain, JAFL 4: 204-205; 1891. (Deluge myth begining with the birth of Nanabozho. From Blackbird "History of the Ottawa and Chippewa Indians of Michigan." Upsilanti, 1887.)  
 PERROT, NICOLAS. In E. H. Blair, "Indian Tribes of the Upper Mississippi and the Great Lakes Regions," I: 31-40. (Earth diver myth, and the creation of mankind.)  
 SCHOOLCRAFT, HENRY R. "The Myth of Hiawatha." 1856. (Some Ottawa myths are included.)  
 WILSON, DANIEL. "Early Notices of the Beaver in Europe and America." Canadian Journal, Series 2, 4: 359-371; 1859. (Legend of Nanabozho chasing a beaver, obtained from Francis Assikinack, pp. 371-372.)  
 WRIGHT, J. C. "The Crooked Tree." Michigan, 1917.

## OJIBWA

- CARSON, WILLIAM. "Ojibwa Tales," JAFL 30: 491-493; 1917. (Western Ontario.)  
 CHAMBERLAIN, A. F. "Notes on the History, Customs and Beliefs of the Mississagua Indians," JAFL 1: 150-160; 1888.  
 CHAMBERLAIN, A. F. "Tales of the Mississaguas," JAFL 2: 141-147; 1889.  
 CHAMBERLAIN, A. F. "Tales of the Mississaguas, II," JAFL 3: 149-154; 1890.  
 CHAMBERLAIN, A. F. "A Mississaga Legend of Naniboju," JAFL 5: 291-292; 1892.  
 CHAMBERLAIN, A. F. "Nanibozhu Amongst the Otchipwe, Mississagas, and other Algonkian Tribes," JAFL 4: 193-213; 1891. (This contains a valuable summary of much of the early and not easily available material on Nanibozhu.)  
 FERGUSSON, NEIL C. "Notes on Timagami Folklore," CGS-M 71: 83-85; 1915.  
 HALLOWELL, A. IRVING. "Saulteaux Mythology," unpublished, (Berens River Saulteaux, 1932-1937.)  
 HAMILTON, J. C. "Two Algonquin Legends," JAFL 7: 201-204; 1894. (Father Cooper says probably Ojibwa.)  
 HEWITT, J. N. B. "Ethnological Researches Among the Iroquois and Chippewa," Smithsonian Miscellaneous Collections 78: 114-117. (Hewitt discusses the meaning of the word Nanabozho.)  
 HOFFMAN, WALTER J. "The Midewiwin or Grand Medicine Lodge of the Ojibwa," BAE-R 7: 1891.  
 JONES, WILLIAM. "Ojibwa Tales from the North Shore of Lake Superior," JAFL 29: 368-391; 1916. (These are abstracts of tales later presented in full as Ojibwa texts, with the following exceptions: 33a, 37a, 58, 59, 60, I-VI, all of which appear to be from Garden River or Manitoulin Island.)  
 JONES, WILLIAM, edited by Truman Michelson. "Ojibwa Texts," AES-P 7, I, II; 1917. (While all abstracts, except those noted, appear in full in the Texts, the Texts are by no means completely represented in the abstracts. There is also a discrepancy in the provenience

assigned to the same tale as given in abstract and in text. That given with the texts should probably be used.)

- DE JOSSELIN DE JONG, J. P. B. "Odžibwe-Texts," *Baessler Archiv, Beiheft 5*: 1-54; 1913. (Obtained on the Red Lake Reservation, Minnesota, 1911.)
- KNIGHT, JULIA. "Ojibwa Tales From Sault Saint Marie, Michigan," *JAFL 26*: 91-96; 1913.
- KUNIKE, H. "Praerie Indianer-Maerchen," Berlin, 1923. (Said to contain 6 Ojibwa legends. Not available to the writer.)
- LAIDLAW, GEORGE E. "Ojibwa Myths and Tales," *Ontario Annual Archaeological Report*.
- |                 |                   |
|-----------------|-------------------|
| a) 1914: 77-79  | d) 1918: 74-110.  |
| b) 1915: 71-90. | e) 1921-22: 84-99 |
| c) 1916: 84-92. | f) 1924-25: 34-80 |
- MICHELSON, TRUMAN. "Ojibwa Tales," *JAFL 24*: 249-250; 1911. (White Earth, Minnesota, 1910.)
- RADIN, PAUL. "Some Myths and Tales of the Ojibwa of Southeastern Ontario," *CGS-M 48*: 1-83; 1914.
- RADIN, PAUL, and A. B. REAGAN. "Ojibwa Myths and Tales," *JAFL 41*: 61-146; 1928. (Obtained 1911-1914, Radin's from Sarnia, Ontario; Reagan's from Nett Lake, Minnesota.)
- REAGAN, ALBERT B. "The Flood Myth of the Chippewas," *Proceedings of the Indiana Academy of Sciences, 1919*: 347-352; 1921. (Provenience is not here given, but it can be taken as Nett Lake, Minnesota, where Reagan was for a time in the employ of the Indian service. This is substantially the same version as that given in Radin and Reagan, pp. 70-76.)
- REAGAN, ALBERT B. "A Trip Among the Rainy Lakes," *Proceedings of the Indiana Academy of Sciences, 1919*: 253-259; 1921. (Moose River, Ontario, 1918.)
- SCHOOLCRAFT, HENRY R. "The Myth of Hiawatha." Philadelphia and London, 1856. (Schoolcraft was first told the Manabozho legend in 1822. Of all Schoolcraft's various publications, only "Hiawatha" was available to the writer when this paper was prepared. Since that time a "Concordance to the Ojibwa Narratives in the works of Schoolcraft" has been published by A. I. Hallowell, *JAFL 59*: pp. 136-153, 1946.)
- SIMMS, S. C. "Myths of the Bungees or Swampy Indians of Lake Winnipeg," *JAFL 19*: 334-340; 1906. (This appears to be a reprint of James Stewart's paper, which see.)
- SKINNER, ALANSON B. "Notes on the Eastern Cree and Northern Saulteaux," *AMNH-AP 9*, Part I; 1911. (Two tales only from the Saulteaux.)
- SKINNER, ALANSON B. "Plains Ojibwa Tales," *JAFL 32*: 280-305; 1919. (Mostly from Long Plains Reserve, Manitoba, 1913. There are also two tales from Wisconsin.)
- SKINNER, ALANSON B. "Bûngi Tales," *JAFL 41*: 159-171; 1928. (Published as Part II of "Sauk Tales." No data whatsoever.)
- SMITH, HARLAN I. "Some Ojibwa Myths and Traditions," *JAFL 19*: 215-230; 1906.
- SPECK, FRANK G. "Myths and Folklore of the Timagami Ojibwa," *CGS-M 71*: 28-82; 1915.
- SQUIER, E. G. "Ne-she-kay-be-nais, or the 'Lone Bird,'" *American Review, 1848*, Part II, pp. 255-259 (Related by George Copway, a Mississauga).
- SQUIER, E. G. "Manabozho and the Great Serpent," *American Review 1848*: Part II, pp. 395-398. (Deluge version as told by George Copway.)
- STEWART, JAMES. "Rupert's Land Indians in the Olden Times," *Ontario Archeological Report, 1904*, pp. 89-100. (Berens River Saulteaux. This was written between 1874 and 1884, describing the Indians as the author had known them forty years before that.)
- THOMPSON, STITH. "The Indian Legend of Hiawatha," *Publications of the Modern Language Association, 37*: No. 1, 128-140; 1922.

### POTAWATOMI

- CHITTENDEN, HIRAM M., and ALFRED T. RICHARDSON, editors, "Life, Letters and Travels of Father Pierre-Jean de Smet, S.J., 1801-1873," N. Y. 1905. (Flood legend, dated 1847, Vol. III, pp. 1078-1084.)
- MICHELSON, TRUMAN. "Notes on Peoria Folklore and Mythology," JAFL 30: 493-495; 1917. (This also contains notes on his Potawatomi material.)
- SKINNER, ALANSON B. "The Mascoutens or Prairie Potawatomi Indians," Bulletin of the Public Museum of Milwaukee, 6: No. 3, 332-411; 1927.
- DE SMET, PIERRE-JEAN. "Oregon Missions and Travels Over the Rocky Mountains, in 1845-46." In Thwaites, Early Western Travels, 29, Pt. II, pp. 373-380; 1906.

### Fox

- JONES, WILLIAM. "Fox Texts," AES-P 1: 1907. (Obtained 1901-1902.)
- JONES, WILLIAM. "Notes on the Fox Indians," JAFL 24: 209-237; 1911.
- JONES, WILLIAM, edited by Margaret W. Fisher. "Ethnography of the Fox Indians," BAE-B 125; 1939. (Material obtained by Jones, 1901-1902; includes nine myths not published in his Fox texts.)
- MICHELSON, TRUMAN. Unpublished manuscripts.
- OWEN, M. A. "Folklore of the Musquakie Indians of North America," Publications of the Folklore Society, London, 51; 1904. (Not utilized; see Michelson's strictures AA 38: 143-145; 1936.)

### SAUK

- BRIGGS, J. E. "Wisaka," The Palimpsest 7: 97-112; 1926. (Secondary source.)
- GALLAND, ISAAC. "Indian Tribes of the West," Annals of Iowa, 7; 1869.
- JONES, WILLIAM. "Episodes in the Culture Hero Myth of the Sauks and Foxes," JAFL 14: 225-239; 1901.
- LASLEY, MARY. "Sac and Fox Tales," JAFL 15: 170; 1902. (Not utilized; see Michelson's strictures AA 38: 145, footnote 1.)
- MARSH, CUTTING. "Letter to Rev. David Greene," Wisconsin Historical Society Collections, 15: 104-155; 1900. (Expedition to the Sacs and Foxes, 1834.)
- SKINNER, ALANSON B. "Ethnology of the Sauk Indians," Bulletin of the Public Museum of Milwaukee, 5; 1925. (Sacred bundle origin myths and culture hero myths, pp. 74-83.)
- SKINNER, ALANSON B. "Sauk Tales," JAFL 41: 147-159; 1928.

### KICKAPOO

- JONES, WILLIAM, edited by TRUMAN MICHELSON. "Kickapoo Tales," AES-P 9; 1915. (Collected in 1903 from the "Mexican" band.)
- MICHELSON, TRUMAN. Manuscript. (This contains a "bungling host" episode, not found in Jones' collection.)

### MENOMINI

- BLOOMFIELD, LEONARD. "Menomini Texts," AES-P 12; 1928.
- HOFFMAN, WALTER J. "Mythology of the Menomini Indians," AA 3: 243-258; 1890.
- HOFFMAN, WALTER J. "The Menomini Indians," BAE-R 14; Part I, 161-238; 1896.

- MICHELSON, TRUMAN. "Menominee Tales," AA 13: 68-88; 1911.  
 [PEET, STEPHEN D.], *Mythology, American Antiquarian and Oriental Journal*, 31: 10-14; 1909.  
 SKINNER, ALANSON B., and J. V. Satterlee. "Folklore of the Menomini Indians," AMNH-AP 13: 217-546; 1915.

### ARAPAHO

- DORSEY, G. A., and A. L. KROEBER. "Traditions of the Arapaho," Field Columbian Museum, 5: 1903.  
 VOTH, H. R. "Arapaho Tales," JAFL 25: 43-50; 1912.

### GROS VENTRE

- KROEBER, A. L. "Gros Ventre Myths and Tales," AMNH-AP 1; Part 3; 1907.

### BLACKFOOT

- GRINNELL, GEORGE B. "A Blackfoot Sun and Moon Myth," JAFL 6: 44-47; 1893.  
 GRINNELL, GEORGE B. "Blackfoot Lodge Tales," N. Y. 1892.  
 GRINNELL, GEORGE B. "Blackfoot Indian Stories," N. Y. 1913. (There is considerable overlapping between this volume and the one preceding, but each has some items not to be found in the other.)  
 DE JOSELIN DE JONG, J. P. B. "Blackfoot Texts From the Southern Peigans," VKAW Amsterdam, 14: No. 4; 1914. (154 pp.)  
 KNOX, R. H. "A Blackfoot Version of the Magic Flight," JAFL 36: 401-403; 1923.  
 McCLINTOCK, WALTER. "The Old North Trail," London, 1910.  
 MACLEAN, JOHN. "Blackfoot Indian Legends," JAFL 3: 296-298; 1890. (These legends are repeated in JAFL 6.)  
 MACLEAN, John. "Blackfoot Mythology," JAFL 6: 165-172; 1893.  
 MICHELSON, TRUMAN, "Piegan Tales," JAFL 24: 238-248; 1911.  
 SCHULTZ, JAMES W. "Blackfoot Tales of Glacier National Park," Boston, 1916.  
 UHLENBECK, C. C. "Original Blackfoot Texts," VKAW Amsterdam, 12: No. 1; 1911. (106 pp.)  
 UHLENBECK, C. C. "New Series Blackfoot Texts," VKAW Amsterdam, XIII: No. 1; 1912 (264 pp.)  
 WILSON, R. N. "Blackfoot Star Myths," The American Antiquarian 15: 149-150; 200-203; 1893.  
 WILSON, R. N. "The Blackfoot Legend of Scar-Face," Report of the British Association for the Advancement of Science, LXVII: 788-789; 1898.  
 WISSLER, C., and D. C. DUVALL. "Mythology of the Blackfoot Indians," AMNH-AP 2: 1-167; 1908.

### CHEYENNE

- CAMPBELL, STANLEY. "Two Cheyenne Stories," JAFL 29: 406-408; 1916.  
 GRINNELL, GEORGE B. "A Cheyenne Obstacle Myth," JAFL 16: 108-115; 1903.  
 GRINNELL, GEORGE B. "Some Early Cheyenne Tales, I," JAFL 20: 169-194; 1907.  
 GRINNELL, GEORGE B. "Some Early Cheyenne Tales, II," JAFL 21: 269-320; 1908.  
 GRINNELL, GEORGE B. "Falling-Star," JAFL 34: 308-315; 1921.  
 GRINNELL, GEORGE B. "By Cheyenne Campfires," Yale University Press, 1926.  
 KROEBER, A. L. "Cheyenne Tales," JAFL 13: 161-190; 1900.

## SELECTED REFERENCES OF GENERAL OR THEORETICAL INTEREST

- ALEXANDER, HARTLEY B. "The Mythology of All Races": X, North American, 1916.
- BOAS, FRANZ. "Dissemination of Tales Among the Natives of North America," JAFL 4: 13-20; 1891.
- BOAS, FRANZ. "The Growth of Indian Mythologies," JAFL 9: 1-11; 1896.
- BOAS, FRANZ. Introduction in James Teit, "Traditions of the Thompson River Indians," AFLS-M VII; 1898.
- BOAS, FRANZ, "Mythology and Folk-Tales of North American Indians." JAFL 27: 374-410; 1914.
- BRINTON, DANIEL G. "The Hero-God of the Algonkins as a Cheat and a Liar," Essays of an Americanist, 1890: pp. 130-134.
- CHAMBERLAIN, ALEXANDER F. "Nanibozho Amongst the Otchipwe, Mississagas, and other Algonian Tribes," JAFL 4: 193-213; 1891. (This contains a valuable summary of much of the early and not easily accessible material on Nanabozho.)
- Deursen, Arje van. "Der Heilbringer; eine ethnologische Studie über den heilbringer bei den Nordamerikanischen Indianern." Groningen, 1931.
- DIXON, ROLAND B. "The Mythology of the Central and Eastern Algonkins," JAFL 22: 1-9; 1909.
- HEWITT, J. N. B. "Nanabozho," in Handbook of American Indians, BAE-B 30: II; 1907.
- KROEGER, ALFRED L. "Catch-Words in American Mythology," JAFL 21: 222-227; 1908.
- LOWIE, ROBERT H. "Catch-Words for Mythological Motives," JAFL 21: 24-27; 1908.
- LOWIE, ROBERT H. "The Test-Theme in North American Mythology," JAFL 21: 97-148; 1908.
- LOWIE, ROBERT H. "Additional Catch-Words," JAFL 22: 332-333; 1909.
- LOWIE, ROBERT H. "The Hero-Trickster Discussion," JAFL 22: 431-433; 1909.
- MALINOWSKI, BRONISLAW. "Myth in Primitive Psychology," 1926.
- MICHELSON, TRUMAN. "The Linguistic Classification of Tête de Boule." AA 35: p. 396; 1933.
- MICHELSON, TRUMAN. "Mammoth or 'Stiff-legged Bear,'" AA 38: 141-143; 1936. (Contains also certain bibliographic and linguistic notes on the Tcikapis myth.)
- MICHELSON, TRUMAN, "Linguistic Classification of Cree and Montagnais-Naskapi Dialects." BAE-B 123, Anthropol. Papers, No. 8: 67-95; 1939.
- MURDOCH, GEORGE PETER. "Ethnographic Bibliography of North America." Yale Anth. Series 1; 1941. (Valuable, but unfortunately not critical.)
- RADIN, PAUL. "Literary Aspects of North American Mythology," Canada, Dept. of Mines. Museum Bulletin No. 16; Ottawa, 1915.
- RADIN, PAUL. "The Trickster Cycle of the Winnebago," Primitive Culture, 1: 8-86; 1926. (The introduction contains a discussion of general interest dealing with the character of the trickster, his various activities, and the author's conclusions regarding the function of this cycle in modern Winnebago life.)
- REICHARD, GLADYS A. "Literary Types and the Dissemination of Myths," JAFL 34: 269-307; 1910.
- SPECK, FRANK G. and GLADYS TANTAQUIDGEON. "Analytic and Comparative Notes on the Transformer Myths," manuscript. (Wabanaki culture-hero cycle.)
- SWANTON, JOHN R. "Some Practical Aspects of the Study of Myths," JAFL 23: 1-8; 1910.
- THOMPSON, STITH. "Tales of the North American Indians," Harvard, 1929.
- THOMPSON, STITH. "Motif-Index of Folk-Literature." Published simultaneously as Folklore Fellows Communications and as Indiana University Studies, 1932-1936.
- WATERMAN, T. T. "The Explanatory Element in the Folk Tales of the North American Indian," JAFL 27: 1-54; 1914.

# THE CULTURE OF THE NORTHEASTERN INDIAN HUNTERS: A DESCRIPTIVE SURVEY

REGINA FLANNERY

THE southern limits of the northeastern hunters at the time of first white contact can be drawn from the Saco River on the Maine coast, north or perhaps a little northwest to the St. Lawrence, thence in a westerly direction to the country around Georgian Bay and Lake Huron, to northern Michigan and along the northern shore of Lake Superior, thence northwest to the Rainy Lake and Lake Winnipeg regions, then northeast to Hudson Bay around Churchill.<sup>1</sup> This line has to be a little arbitrary inasmuch as northeastern culture blends off in all directions even, in a sense, into Eskimo culture. This latter, however, lies outside the scope of the present paper. All of the peoples within the proposed area are, with the possible exception of the Beothuk, Algonquian-speaking.

Bearing in mind the danger of over-simplification inherent in a task of this kind, and the fact that there are still many lacunae in our knowledge of the area, we shall first outline the characteristics which seem to be more common to the whole area, or most of it; then treat a little more fully those which are more distinctive of the northerly portion thereof; and finally list briefly those elements which seem to set apart from the northern regions the two southern sub-areas of the hunting area.<sup>2</sup> Characteristics which have a markedly limited distribution in the area will as a rule be omitted. Major attention will be given to non-material culture.<sup>3</sup>

<sup>1</sup> This boundary is practically the same as the southern and western boundaries of North Atlantic Slope Area (no. 10), the southern boundary of Northern Great Lakes Area (no. 14), and the western boundary of Eastern Sub-Arctic Area (no. 15) of A. L. Kroeber (1939).

<sup>2</sup> To document each item in the following description would more than double the space allotted for the present paper. The reader is referred for printed sources to the excellent bibliographies in G. P. Murdock, 1941. For much of the material, however, especially as it relates to the Albany River region and to the Têtes-de-Boule, I have drawn upon the field notes of my colleague, John M. Cooper, who kindly placed them at my disposal. As it relates to the Cree and Montagnais of the James Bay region, I have depended upon my own field notes. In addition it should be noted that the culture, although described in this paper in the past tense, still functions in large measure, perhaps a good half of it, over the greater part of the area that lies beyond the limit of white settlement. For the rest, much of the culture still survives in the memory of middle-aged and older people, although certain portions, such as the war complex, must be reconstructed from the early historical sources.

<sup>3</sup> Many of the items of limited local distribution are touched upon by Cooper in the paper

## GENERAL

A certain underlying uniformity in culture, centered largely in the food quest and related activities, makes the area one. Subsistence was by hunting, fishing and gathering. The only horticulture practised was around Georgian Bay and the north shore of Lake Huron and this was completely subsidiary, except perhaps for a period among the Ottawa. The family hunting ground system with conservation through sparing and rotation was characteristic and detailed similarities in methods of hunting by use of deadfalls and snares were widespread, as was also the utilization of dogs in hunting but not for traction. The toboggan was hand-drawn and the use of snowshoes universal. Moose, bear, beaver, and caribou were the more important game animals, but a number of smaller ones such as muskrat, mink, otter, porcupine, etc., were also hunted. In the spring and fall geese and ducks were a welcome addition to diet in many sections. Over the whole area the same parts of various game animals were considered delicacies, for example, the tongue and nose of the moose, the tail of the beaver, the heart of the bear,—these being reserved to the men among most of the groups. The reasons for the girl's seclusion and for the menstrual taboos for women were partly connected with hunting luck.

Methods of divination, particularly scapulimancy and scrying, were employed throughout the area to predict success in hunting, and the use of the bezoar as a hunting charm was widespread. Respect observances toward game animals found their most elaborate expression in bear ceremonialism, but care in the disposal of bones of all the more important animals was characteristic. Included in the complex was the idea that one must not laugh at or make fun of animals, deprecate them in any way, or torture them. Special emphasis, too, was placed upon the first of each kind of animal killed in the season as well as the first of each kind killed by an individual,—starting with the first bird or rabbit when a boy might be five or six years old.

A well-marked theism prevailed and the Supreme Being was considered "master" or "owner" of meat—food which he gives to man. Shamanism, with the characteristic guardian spirit complex, was common to the whole area as was also the trickster cycle. Strangely enough the shaking tent rite,

---

which follows and articulates with this one. Fuller surveys of the material culture of the northeast are easily accessible in Birket-Smith, 1918; and in Speck, 1926. Speck also summarizes other phases of culture, particularly for the Labrador peninsula and the region south of the St. Lawrence.

so fundamental over most of the area, seemingly stopped abruptly at the St. Lawrence.

Most of the hunting was done in the late fall, during the winter and in the early spring. While fishing was of value all year round, it was of special importance in the summer when groups of families who had been separated from each other most of the rest of the year gathered together for a short time. The chief functioning politico-economic units were the more or less patriarchal extended family or near-kin groups, hence an atomistic political structure obtained. Band organization was loose, and even where there were chiefs, these had little power.

### THE NORTHERN BELT

While all of the above listed characteristics are common to the area, they stand out most sharply throughout the northern belt where subsistence has always been notoriously difficult and where life is reduced to a minimal simplicity. Getting a living by hunting dominated the waking thoughts as well as the dreams of these peoples.

The fear of famine, well-grounded in the experience of even present-day natives, loomed large. "It was cold and we were starving" is a phrase used over and over again by the Indians in relating their traditional narratives as well as in speaking of their everyday life. One woman of the James Bay area said to me: "Sometimes there will be only one rabbit or one partridge to be shared by a whole tentful of people, and then we have to chew even the bones. It is better to have sickness than to starve. That is the most awful thing. People when they are starving eat inner bark and tripe de roche—some take anything they can get hold of, old moccasins, anything. A good many times they find a man off hunting who is so weak he can only crawl. When they come across people who are starving they are always afraid until they can account for the bodies of each in the party. The old people stand hunger longer and the little children usually die first, so they are always afraid something awful has happened." In this last phrase reference is made to famine cannibalism and the belief that a person who has eaten human flesh turns into that most fearsome of all beings, a *wihtiko*.

Great importance was attached to dreams: both the dream-vision, through which the guardian spirit was acquired, and the more common type of dreams through which the whereabouts of game was revealed. Regarding the former, in line with the general uninstitutionalized behavior in the northern belt, the supernatural helper or helpers might have been acquired at any time of life and not necessarily nor always at the time of the puberty fast, which in fact was apparently lacking among the Montagnais-Naskapi.

The line is difficult to draw between the ordinary man who has "power" through his guardian spirit, as all men must if they are to be successful hunters, and the conjuror or shaman. The conjuror or shaman had more "power" than the ordinary man but it is of the same kind. Certain it is that some individuals in each local group stood out above the others in this respect.

One who could manipulate the shaking tent would be considered a conjuror, as would also one who had the ability to cure illness supposedly due to witchcraft. On the other hand, practically all hunters knew some kinds of divination. Perhaps one might be more successful at scrying, another at scapulimancy, and still a third, while knowing how to do either or both of these, would receive guidance from his supernatural helper by singing and drumming, or perhaps merely by smoking and concentration. Again, recourse might be had to the sweatlodge either for magico-religious reasons in connection with hunting, or it might be employed, seemingly without supernatural connotation, in curing the sick. Herbal or natural remedies were in general divorced from magic and were common property. Anyone who knew, say, of an infusion to relieve a cold, or of a poultice to cure a skin eruption, would pass on the information openly and free of charge. Blood-letting to relieve localized pain was one of the widespread remedies of this type.

It seems safe to say then that shamanistic practices in the northern belt were employed preponderantly in the magico-religious activities concerned with hunting, and directly with health only insofar as illness was caused by witchcraft. There was no distinction into various classes of medicine men, nor was there any recognized apprenticeship. The general pattern was modified locally and within the local pattern there was rather wide scope for individuality.

There were several types of minor magic for which no supernatural helper or power was needed. Although these were more in the nature of personal magical practices, they occurred throughout the northern belt with surprising regularity. For instance, when the snow was soft and a good crust desired, while there were many ways of bringing the north wind, three were common to the whole northern belt,—the buzzer, the bull-roarer, and the snow figure, either of a hare or of a man, faced to the north. Again, foetal inclusions (or mummified foetuses) were regarded as effective hunting charms. Of the widespread methods of predicting hunting luck we may mention that of placing the patella of the bear on a hot rock and watching the way it "jumps"; beaver hip-bone divination, that is, holding the bone in one hand, then raising the arms above the head and attempting to stick a finger

of the free hand through the opening in the bone; and tossing otter paws, interpreting by the way they fall whether hunting will be good or bad.

There were a number of omens and sayings, too, which showed a practically continuous distribution through the region. If a raven was seen to do a sort of somersault in the air, this was taken to mean good luck in hunting. It was good luck to come upon the nest of the whiskeyjack (Canada jay), but it was bad luck to take the eggs. To feel a "touch" on the back meant a stranger was coming and various interpretations were given to twitches felt on one eyelid or the other, below either eye, and in the muscles of the arms and legs. It was considered unlucky to hear at night a bird that normally sings only in the day, such as a robin, and it was likewise unlucky to count the number of tent-poles.

In this northern belt there was little in the way of ritual. Such offerings as were made were very simple. The prayers that accompanied them were short and with no set formulae. The first-food offerings, and tobacco or other offerings, especially at rapids, for safety in water travel, were typical. A bit of food was usually put in the fire before eating any meal, but with a little more elaboration if the meal were a feast in honor of the first of any kind of game killed by a particular individual, or the first of a species killed in the season.

Sometimes the eat-all feast was prescribed, but with details differing from region to region as to which kind of animal food it was applied; whether the host participated in the feast, or whether he should spend the time singing and drumming, etc. Note, too, should be made of the spring feast which was widespread. The dominant idea seemed to be that of thanksgiving for having survived the winter. The best parts of the game animals, particularly the grease therefrom, were saved up during the winter for the feast. If, as was customary and desirable, several families met in the spring, they would pool supplies and have the feast in common. Grease was poured on the fire and a short prayer was said, in most cases directed toward the Supreme Being, and singing, drumming and dancing preceded, followed or took place during the feasting. Incidentally both at the spring feast and on other occasions the characteristic woman's dance, if it can be dignified by that name, consisted in each woman holding to a tent pole and bobbing up and down by bending the knees while keeping the feet in the same spot.

Among the minor folklore characters was the so-called "skeleton being" who was believed to float about in the air. In some places he was considered quite harmless. In others he was supposed to swoop down on unwary victims and kill them by tickling them.

Social culture among the northern Indians was very simple. The sib did

not exist and there were no societies of any kind. The sororate, the levirate, and cross-cousin marriage were known but were not obligatory. Certain mild avoidances were found here and there. For example, around parts of James Bay parents-in-law did not address directly their sons-in-law and daughters-in-law, and vice versa, for at least a short while after marriage. Shyness seems to have been the dominant affective note in these observances. Among the Barren-ground Montagnais of the northeast Labrador peninsula, there existed a special joking relationship with sexual privileges between cross cousins and siblings-in-law. The rest of the area, however, seemingly lacked such well-defined joking relationships. Incest and infanticide occurred rather frequently, but abandonment of the aged was not common considering the conditions under which these people lived.

Compared with most other North American Indian peoples, even the crises of life passed relatively unmarked. Belief in conception and foetal development from iterated coitus and in prenatal impressions prevailed. The afterbirth was never burned and the navel cord was saved. A few objects were usually attached to the cradle bow,—caribou teeth, goose cheek, and the like,—with the more or less vague idea that while they served to amuse the child they also aided in hunting luck. A little ring of willow filled in with netting and placed on the child's breast or on the cradle bow was believed to protect him from catching cold. Among some groups a simple feast might mark the naming of the child, but there seems to have been nothing more in that connection. The Montagnais, at least, had a very simple ceremony when the child took his first steps alone outside the tent and when he first wore snowshoes.

The practice of the seclusion of girls was generally the same over the region, but details differed somewhat from one locality to the next. As stated elsewhere in the present paper, the boy's puberty fast seems to have been lacking among the Montagnais-Naskapi although important elsewhere. Marriage was usually arranged by parents, and mingling of the sexes before marriage was not allowed, nor was there any recognized period of courtship. If the food were on hand, a little better meal than usual might mark the wedding, but there was nothing we could call a wedding rite proper.

Since the trend of this culture was dominantly irenic and non-predatory, the warrior had no place. Status for the man consisted primarily in being known as a good hunter, which implied natural ability of no mean order plus supernatural guidance through the guardian spirit. The qualities most admired in a woman were that she be a good worker, generous and soft-spoken.

In this northern belt there was little, if any, manism. There was a widespread saying that the northern lights are the dead dancing, but there was practically no interest in life after death and the non-Christian natives today are very vague regarding it. Deep sorrow at the loss of relatives might be evident in the conduct of the bereaved person, but it was not institutionalized in any way nor was there any extravagant expression thereof in the way of mourning rites.

Imitative play on the part of children and a few pastimes constituted the recreative aspects of this northern culture. Team games were lacking and even gambling was not found. There was only a meager development of pictorial and plastic arts and of music. On the technological side there was a very nice adjustment to environment, but even here workmanship, while adequate, was often indifferent, with the exception of the bark canoe and the snowshoe. Birch and other barks, animal skins, wood, and bone were the major materials employed, with very little use of stone, and with no pottery. Weaving, except for rabbit skin, was unknown.

In our attempt to describe the culture of the northern belt we have perhaps over-emphasized the similarities. Naturally there were more local variations and exceptions than the few we have had the opportunity to mention in passing. For instance, in the far northeast, both in the Labrador Peninsula and on the west coast of James Bay there was a marked weakening of the family hunting ground system as one approached the tundra region; in fact here and there it gave place to a type that should more justly be called communal tenure. Some minor differences, too may be noted between Montagnais-Naskapi on the one hand and Cree culture on the other. As a rule these are variations of a single theme. A few examples may serve to illustrate.

Animal ceremonialism was, in general, somewhat more elaborated among the Montagnais-Naskapi and included some magico-religious attention to fish,—a feature that seemed to be lacking or at least not noticeably developed elsewhere. The belief in animal spirit chiefs was more important among the Montagnais-Naskapi than among the Cree, although it was known among the Têtes-de-Boule and again at York Factory. *Memegwecio*, the diminutive being who looks like a human except that he is covered with hair and has a very flat nose, was known as the chief or "owner" of the bears on the east coast of James Bay, whereas on the west coast he was more of a folk-lore character who stole fish and lived in rocks. The Cree left offerings for him on the rocks at rapids. In the shaking-tent rite the principal spirit and "interpreter" for the others was, in the east, *mistapeo* (Big Man), in the south, *okijiko* (Sky Being), and in the west, *mikenak*.

(Turtle). Such differences could, of course, be multiplied, but in none of these cases do the differences appear significant enough to set apart the regions as well defined areas.

### THE SUB-AREAS

On the southern border of the hunting region, however, some marked differences are apparent. The extreme simplicity and monotony of the northern belt is lost in a relative complexity and variety. These differences, both of cultural emphases and of content, are such that we may well speak of the area south of the St. Lawrence and that occupied by the woodland Ojibwa as distinct sub-areas.

The area south of the St. Lawrence, including most of Maine, the Maritime Provinces and Newfoundland, was characterized, in contrast to the region north of the St. Lawrence, especially by martial trends and the war complex, with palisaded villages, ball-headed club, shield, war cannibalism, torture of prisoners, burning at stake, gauntlet running, head trophies, scalping and adoption of prisoners. There was a more marked cohesion in the political group and the power of chieftaincy was greater. Social organization was somewhat more complicated, with something like the sib among at least the Penobscot. Wampum, gambling and team games, and the dog feast were other aspects of culture contrasting with the north as were also use of pottery, steatite vessels, and splint basketry.

Among the Ojibwa, particularly those closer to the Great Lakes, a good deal of the same greater chieftaincy power and war complex was found as well as gambling, team games and dog feast, together with certain more characteristic features. Paternal sibs, cross-cousin joking relationship, and respect avoidances between parent-in-law and children-in-law appreciably more formalized than on James Bay, served to mark off this sub-area very clearly, as did also the midewiwin rite and society. Contrast with the northern culture may be seen too in the fact that there were several classes of medicine men and more of magic was connected with herbal medicine,—with payment required both for remedies and for knowledge of the prescriptions. Beliefs regarding the future life were characterized by obstacles to be overcome before the deceased reached the land of the dead, the feast of the dead, the erection of grave houses, and certain mourning customs. Some traces of horticulture, wide use of wild rice where available, and cedar mat and yarn weaving further differentiated this sub-area.

### CONCLUSION

While we feel justified in marking off the two sub-areas as distinct from the northern belt, no sharp line can be drawn. It should be recalled more-

over that the boundaries delimiting the area as a whole are somewhat arbitrary for the reason that many characteristics of northeastern culture extend far beyond, particularly among the Plains Cree and Plains Ojibwa, and among the northern Athabaskans. A considerable number of the distinctively northeastern traits, too, can be followed down the Atlantic coast and into the Iroquois area. Some very minor traces, such as the shaking-tent rite and similarities in folklore, are found among the Algonquians of the northern Plains. Nevertheless the typical northeastern culture pattern covers the coniferous belt and follows it pretty closely from the Atlantic to the Winnipeg region.

CATHOLIC UNIVERSITY OF AMERICA  
WASHINGTON, D.C.

# THE CULTURE OF THE NORTHEASTERN INDIAN HUNTERS: A RECONSTRUCTIVE INTERPRETATION

JOHN M. COOPER

THE present study is an attempt to reconstruct the early migrational and cultural history of the northeastern North American hunting peoples, exclusive of the Eskimo. To conform to the broad plan of the symposium of which this paper is a part, the writer is confining his attention chiefly to the ethnological evidence, and leaving somatological, linguistic, archaeological and overall interpretations to other participants.

This paper presupposes and articulates with the preceding descriptive survey by Flannery, of the culture, subdivisions and habitat of the northeastern hunters. We shall deal first with the historical or post-contact migrational and cultural shifts, and after that with the prehistorical or pre-contact ones.

## POST-CONTACT SHIFTS

### MIGRATIONAL SHIFTS

The more important post-contact migrations of the Montagnais-Naskapi, Micmac, Otchipwe, and Cree have been ably pieced out from dated historical sources by Speck, Mooney and Thomas, Birket-Smith, Mandelbaum and others and published in easily accessible sources.<sup>1</sup> So we shall merely advert to these migrations in passing, without going into details, and shall limit discussion to certain controverted or unsettled points.

The Montagnais-Naskapi have in post-contact times spread eastward, at the expense of previous Eskimo coastal and inland occupants, over a large section of the Labrador peninsula along the Gulf of St. Lawrence and the country north thereof to well beyond Hamilton River.<sup>2</sup> That, however, the Montagnais-Naskapi are rather recent arrivals in the peninsula as such, as is often assumed, is quite another matter.

The chief evidence for this assumption appears to be Turner's report of a native tradition among the Nenenots (Montagnais-Naskapi) of the Ungava (Chimo) district of the northern Labrador peninsula: "The Nenenots appear, from the best information I could obtain on the subject, to have

<sup>1</sup> Review of whole area in Birket-Smith, 1930a, pp. 2-7, map, p. 9, bibliography

<sup>2</sup> Speck, 1931, pp. 564-71, map p. 560; 1936, pp. 314-25.

been driven to their present location during the wars waged against them by the Iroquois in times long gone by and remembered only in tradition. They assert that their original home was in a country to the west, north of an immense river, and toward the east lay an enormous body of salt water. The former was supposed to be the St. Lawrence river and the latter to be Hudson bay. When they came to their present place they say that they found Eskimo alone, and these only along the coast."<sup>3</sup>

As is obvious, the tradition is decidedly vague regarding both place and time. Even if we accept the very questionable identification of either the St. Lawrence or Hudson Bay,—we surely cannot accept both, as a glance at the map shows,—the location of the supposed center of dispersion is still very vague. The emphasis on Iroquois pressure suggests a post-contact period, and after the middle of the seventeenth century, but Montagnais-Naskapi were already on the lower St. Lawrence and its hinterland in the early seventeenth century and in the vicinity of Rupert's House in 1670–75.<sup>4</sup> The tradition is reported by Turner for only the Montagnais-Naskapi of the Chimo region; those of the western Labrador peninsula from Rupert's House to Fort George have no such tradition, so far as Flannery and myself could discover from field work in the latter area. In view of all this, the Nenenot tradition, if historical at all, should, it would seem, be best interpreted as referring to some minor local movement on the part of one small group of Montagnais-Naskapi within the peninsula. It cannot reasonably be invoked as even probable evidence for the assumed relatively recent first arrival of the Montagnais-Naskapi as such in the peninsula.

It might theoretically be argued either that, in view of their high degree of adaptation to their environment, the Montagnais-Naskapi have been long resident in the peninsula, or that, in view of the relative uniformity of their culture and language, they were recent intruders there. But neither inference appears to have any appreciable validity. For, on the one hand, if their cultural ancestors had previously become adapted to a similar environment nearly anywhere in the coniferous belt to the west or south, then as newcomers into the peninsula, they should have required no great amount of time to make the minor local adjustments entailed. On the other hand, much or most of the uniformity is readily explainable as the result of adaptation to fairly uniform environment, of cultural and linguistic tarriance which among many marginal peoples elsewhere is commonplace, and of

<sup>3</sup> Turner, 1894, p. 267.

<sup>4</sup> Michelson, 1939, pp. 87–88. On peaceful monopolistic trading relations of Hurons and Nipissings with northern Indians and on absence of Iroquois penetration into far north, until middle of seventeenth century, see Hunt, 1940, *passim*.

the large measure of inter-band contact through trading, intermarriage and wanderlust that characterizes the northeastern hunters. As regards this last point, at nearly any large trading post or in nearly any one band you are apt to find today individuals or individual families hailing from a half-dozen other localities or bands a hundred to several hundred miles distant.

So far as the present writer can discover, we have no specific evidence that in historic times, or even in prehistoric times, the Eskimo occupied the west coast of the Labrador peninsula (the east coast of James Bay) from Cape Jones down to Eastmain or Rupert's House. There is nothing, to my knowledge, in the extremely scanty early literature of the region that would justify such an inference. The earliest linguistic data, from Thomas Gorst's Journal of 1670-75, on the natives of the Rupert's House area clearly identify them as Algonquians.<sup>5</sup> The anthropological tradition, persisting to the present—for example, Michelson, 1939, map p. 72—of such Eskimo occupation of the east coast of James Bay apparently harks back to Powell's map and to his statement: "On the east coast of Hudson Bay the Eskimo reach at present nearly to James Bay. According to Dobbs in 1744, they extended as far south as the east Maine [sic] River, or about 52°. The name Notaway (Eskimo) River at the southern end of the bay indicates a former Eskimo extension to that point."<sup>6</sup> Neither of Powell's lines of evidence appears valid.

The pertinent passage in Dobbs reads: "The East Main [east coast of James and Hudson Bays], from Slude [Eastmain] River to Hudson's Streight, is least known, there being no [Hudson's Bay Company] Factories fixed there for Trade, altho' the best Sable and black Fox Skins are got there. Here the Nodway or Eskimaux Indians live, who are in a manner hunted and destroyed by the more Southerly Indians, being perpetually at war with each other."<sup>7</sup> Dobbs had never been to Hudson or James Bay, and, almost certainly, he had no information at second-hand regarding occupancy of the east coast of James Bay. Furthermore, in another passage he states: "The Indians about that River [Rupert's River] are simpler than those of Canada. The Nodways or Eskimaux Indians, near Hudson's Streight are wild and barbarous." This passage is most likely taken from Oldmixon: "The Indians about Rupert's River . . . are more simple than the Canadans [sic] . . . They are generally peaceable, . . . except the Nodways, a wild and barbarous People on the Borders of Hudson's Streights,"<sup>8</sup>

<sup>5</sup> Oldmixon, 1931, p. 396; Michelson, 1939, pp. 87-88; Albanel's "voyage," Thwaites, 1896-1901, vol. 56, pp. 191, 203.      <sup>6</sup> Powell, 1891, p. 73, cf. 47.      <sup>7</sup> Dobbs, 1744, p. 49.

<sup>8</sup> Dobbs, 1744, p. 12; Oldmixon, 1931, p. 381. The passage in Dobbs occurs, word-for-word identical, in Ellis, 1748, pp. 76-77.

—unless both Dobbs and Oldmixon were here using a common source, such as Zachariah Gillam's journal of his voyage of 1668–69 to Rupert River. Finally Dobbs is contradicted by Coats, by far our best mid-eighteenth century informant, who had personally made many voyages to Hudson Bay between 1727 and 1751, and who, after stating that the interior parts of Labrador are wholly occupied by the Northern Indians [Algonquians], goes on to say: "All the hilly and mountainous parts of Labrodore [sic] are occupied by the Usquemews, from the bay of St. Lawrence on the southern, eastern, and northern borders, and all along the east main [of Hudson Bay] to 56° and 57° latitude [that is, down to about Richmond Gulf], and on all the islands adjacent, who are the seamen and fishermen on salt waters, as those ["the Northern Indians"] are on inland lakes and fresh water rivers."<sup>9</sup> To judge from Coats, who was personally acquainted with the east main from Rupert River to Hudson Strait, and knew the Richmond Gulf region especially well, the Eskimo, in the middle of the eighteenth century, occupied the east coast of Hudson Bay only as far south as Richmond Gulf; their occupancy of the coastal strip from Richmond Gulf to their present southernmost extension around Cape Jones may, for all we know, have come about only since around 1750.

To draw the conclusion Powell drew from the name of the Nottaway River would be highly hazardous. Dobbs, apparently following Oldmixon, as quoted supra, uses Nodway for Eskimo. But the word, with its variants, meaning "snake," "enemy," "ravager" in Algonquian, was much more commonly applied in the northeast to the Iroquois,<sup>10</sup> as it is today. And actually we know from Albanel that the Iroquois had raided up to Lake Nemiskau on the Rupert River about 1665.<sup>11</sup> The memory of their raids around the southern end of James Bay is still vividly preserved in native tradition, and Edward Namē'kus, one of my most reliable and intelligent older native informants at Rupert House told me in 1932 that his grandfather had told him that the Nottaway River got its name from the fact that the Iroquois, *nātāwē'wuts*, used to come down this river on their raids. Further, on older maps, the Nottaway River is designated as the "river of the Iroquois."<sup>12</sup>

Robson, writing in 1752, affirmed: "The Eskimaux, who are the professed fishers, used to inhabit the country on the east-main between the straits

<sup>9</sup> Coats, 1852, pp. 88–89.

<sup>10</sup> "Nadowa," in Hodge, ed., 1907–10; Speck, 1931, p. 564.

<sup>11</sup> Thwaites, ed., 1896–1901, vol. 56, pp. 182–83; Oldmixon, 1931, pp. 385–86.

<sup>12</sup> Bacqueville de la Potherie, 1753 vol. 1, map opp. p. 56; Thwaites, ed., 1896–1901, vol. 44, p. 323, footnote; Coats, 1852, pp. 55–56, linked the Nottaway River with the Ottawas. This does not appear very convincing.

and the bottom of the Bay: but they are since driven away to the northward by the other Indians, who are rendered much superior to them, on account of the supply of arms and ammunition which they receive from the English: so that a tract of land of more than three hundred miles extent from north to south, lies almost waste, without trade and without inhabitants." So the Eskimaux retreated to Hudson's Straits.<sup>13</sup> Robson offers no evidence to support this statement. And he himself spent his six years, 1733 to 1736 and 1744 to 1747, of residence on Hudson Bay in the Churchill and York region, hundreds of miles from the East Main, at a time when the East Main of James and Hudson Bays north of about  $52^{\circ}$  or  $53^{\circ}$  to Cape Diggs was practically a terra incognita.

Turner, in more recent times, stated: "In former years the Innuit [Eskimo] extended entirely around the shore of Hudson bay. Now there is a very wide gap, extending from the vicinity of Fort George, on the eastern coast, to the vicinity of Fort Churchill, on the western coast."<sup>14</sup> There is no shred of scientific evidence to support this statement, and Turner himself offered none. Nor can his statement that the Eskimo occupied the eastern shore as far as  $53^{\circ}$ ,<sup>15</sup> that is, midway between Fort George and Eastmain rivers, be accepted. Turner made his observations at Fort Chimo and was never on the east coast. The present natives, some of the older of whom were grown-up adults in Turner's time, 1882-84, have no such memory. Mateskwínámau, who had lived all his ninety-three years in and around Fort George and who had long served as native interpreter there for the Hudson's Bay Company, told me at Fort George in 1932 that the Eskimo had never in his memory lived on the coast around Fort George, and that when he was a boy they used to be at Cape Jones, where they now are and south of which on the coast they do not go: some used to stay at Paint Hills Islands, off the coast at  $53^{\circ}$ S, which may account for Turner's statement.

Finally, had there been recent Eskimo occupation of this coast, we should expect to find some surface indications thereof. Neither Flannery nor myself have made any thorough archeological survey of this coast, and such remains may actually be there. But if they were, it seems more than likely that the coastal Indians of the area would have some awareness of them or would have picked up an occasional surface artifact. Actually the Indians have no information to this effect, so far as we can discover from very careful inquiries. There has been in recent decades a slight Eskimo intrusion by isolated families well down into some of the islands of James Bay—

<sup>13</sup> Robson, 1752, pp. 63-64.

<sup>14</sup> Turner, 1894, p. 180.

<sup>15</sup> Turner, 1894, p. 179.

according to local report, under encouragement from the Hudson's Bay Company—and in 1932 I stayed a couple of days with one Eskimo family who were living at Cape Hope Island about fifteen miles northwest of the mouth of Eastmain River. But there seems to be no evidence whatever of actual early Eskimo occupation of the coast.

The easterly drift of the Micmac to Newfoundland and the extinction of the Beothuk have been covered in detail by Speck, as have the westerly drifts of the Otchipwe and Cree by Mooney and Thomas and by Mandelbaum respectively, so we need not here enter into details.<sup>16</sup> The special case, however, of the Têtes-de-Boule calls for a short discussion.

The Têtes-de-Boule, speaking a Cree dialect with only very minor influences from Otchipwe (-Algonkin), represent a linguistic enclave distant a good two hundred miles as the crow flies from their nearest Cree neighbors to the northwest, the Kesagami Cree who likewise speak—or spoke as the dialect is almost extinct—an *r*-dialect of Cree. The Têtes-de-Boule are separated from the main body of the Cree by the Montagnais-speaking Waswanipi band and by the Grand Lac, Abitibi and other Indians speaking a language or languages certainly not Cree and seemingly of the Otchipwe (-Algonkin) sub-family.<sup>17</sup> That the Têtes-de-Boule were formerly in touch with the main body of the Cree is certain on linguistic grounds. Whether or not their separation from the main body occurred in pre-contact or in post-contact days is not known from any of our historical documents, and they themselves have no traditions regarding the matter. Nor is there any evidence in native tradition or in our historical sources as to how it occurred; whether there was a southwesterly push of the Waswanipi, a north-easterly one of the Abitibi and others, or in some other way.

There is some ground for concluding that in the early seventeenth century a Cree or Cree-like dialect was spoken by some of the natives still farther east and nearer the lower St. Lawrence, and *r*-dialect with certain rather suggestive resemblances to modern Têtes-de-Boule Cree, but Michelson's detailed analysis of some of the extant published and manuscript

<sup>16</sup> Micmac-Beothuk: Speck, 1922, pp. 25-30, 117-25; also Howley, 1915. Otchipwe: Mooney and Thomas, 1907; Thwaites, ed., 1896-1901, vol. 18, pp. 230-31; Kinietz, 1940, pp. 317-20; Warren, 1885; Neill, 1885. Cree: Mandelbaum, 1940, pp. 169-87.

<sup>17</sup> See maps: Cooper, 1928, p. 207; Michelson, 1939, p. 72. The latter map through oversimplification shows the Têtes-de-Boule practically in touch with the Kesagami Cree. The first indications of the Kesagami *r*-dialect were gathered by the writer in 1927, and more fully expanded by data obtained in 1932-33. Dr. James A. Geary is now working, through analysis and field studies, on the task of clearing up these obscure Otchipwe-Algonkin relations.

linguistic data makes the identification somewhat less probable than I had thought it to be a decade ago. The point still awaits final solution, and we have not space to go into it in detail here.<sup>18</sup>

### CULTURAL SHIFTS

Nearly all of the cultural change that has come over the far northern of the northeastern hunters in post-contact times has been due to diffusion from the whites. The more important things brought in through such white contact are: flour, pork, tea, and sugar; the steel ax; firearms; the canvas-covered canoe and, in the last three decades, the outboard motor; European cloth and clothing styles; alcoholic beverages; metal pots and containers; matches; probably a tightening of the family land tenure system in some areas and certainly a loosening and undermining of it in others; currency and credit in connection with the fur trade; chiefs among many groups and possibly a little greater band-cohesion; gambling here and there among the far northeastern Cree and Montagnais who had previously lacked it; Christianity; monogamy and a number of changes in their social and moral codes.

Very little seems to have infiltrated into the northeast from Iroquois, Huron, or other Indian sources to the south or west, either in post-contact, or, for that matter, in pre-contact times, except on the borderlands in the Wabanaki and Otchipwe subareas, a point to which we shall return. The pipe and tobacco among the Montagnais-Naskapi, the snowsnake and woman's double-ball game, and platter among the Cree of the west coast of James Bay, probably represent such later infiltrations from the south and west respectively.<sup>19</sup> The use of dog traction for the toboggan is, at least in much of the area, of very recent introduction, within the life-time of the older people still living; this has come in partly through white, partly partly through Eskimo, influence. The war complex, which at the time of first discovery was in full career on the lower St. Lawrence and which in the succeeding couple of centuries raged along many sectors of the periphery of the northeast as successive groups acquired firearms, has of course long since ceased to exist.

<sup>18</sup> Michelson, 1939, pp. 90-95. Some of the ms. linguistic material, not discussed by Michelson, in the Quebec archiepiscopal archives has a bearing on the problem.

<sup>19</sup> Speck, 1926, pp. 274, 282; Flannery, 1936, pp. 52-54.

## PRE-CONTACT SHIFTS

### THE SUB-AREAS

The further problem that now faces us is the much more puzzling one of reconstructing the cultural and migrational shifts that occurred prior to white contact. We shall begin with the interpretation of the two sub-areas, the "Northern New England" or "Wabanaki" one, to the east, south of the St. Lawrence, and the Otchipwe one to the west. In both sub-areas much of the cultural content by which they diverge from the more northern hunters was acquired around the period of first white contact or well thereafter, not all of it in pre-contact days.

In the eastern sub-area these divergent elements have seemingly penetrated chiefly from Iroquoian sources, in much slighter measure from southeastern ones. Flannery in her analysis and interpretation of the culture of the hunting peoples of Maine, the Maritime Provinces and Newfoundland, which she calls the "Northern New England" area (Speck's "Wabanaki group"), has given us a lengthy list of elements which, she concludes, can, with varying degrees of probability or plausibility, be considered as due to diffusion into the area from Iroquoian and southeastern sources.<sup>20</sup> These elements represent a later overlay on an older culture that is essentially identical with that of the more northern Algonquian hunters.

The following elements are traceable to Iroquoian sources: confederacies (Wabanaki), torture of prisoners, burning at stake, ball-headed clubs, scalping, stick games, use of wampum in compensating murder, turtle shell rattle, negotiatorial wampum belts, splint basketry, cannibalism, gauntlet running, adoption of prisoners, blowing by medicine man in curing, effigy pipes, eating dog flesh as delicacy and at ceremonial feasts, political interpretation of curved designs, lacrosse, snowsnake, thunder-beings, milky way as path to land of souls, myth of twins quarreling before birth, catlinite pipes, deer-hoof rattle, pump drill, woven animal hair, invitations by sticks, and eating bear as slain enemy.<sup>21</sup>

The following elements are perhaps traceable to southeastern influence: solar cult, storage of food in pits, and palisades.<sup>22</sup>

Regarding the Otchipwe or western sub-area, the war complex, team games, gambling, the dog feast, the feast of the dead, sib organization, and the traces of horticulture found on the border, are absent from the main body of northeastern hunter culture and on the other hand are widespread

<sup>20</sup> Flannery, 1939a.

<sup>21</sup> Flannery, 1939a, pp. 179-82 and *passim*; Speck, 1926, pp. 283-87, 309, and Dixon, 1914, pp. 72, 74-75.      <sup>22</sup> Flannery, 1939a, p. 182 and *passim*.

among the peoples with whom the Otchipwe were in immediate or indirect contact to the east, south and west. This suggests that these elements are later acquisitions from Iroquoian, Siouan, and southern sources. The mide-wiwin, however, at least as an organic whole, and apart from the generic underlying concepts of marked ritualism and religious society, seems more likely to be a local Otchipwe development.<sup>23</sup> Depositing tobacco in the ground after gathering medicinal roots, and certain peculiar future-life beliefs of the Otchipwe, are also probably original Otchipwe inventions, to judge from the distribution.

### THE WHOLE AREA

If we strip off these more recent accretions, partly pre-contact, partly post-contact, from the two sub-areas, we have left a basic underlying culture fairly uniform over the whole northeastern hunter area, including the two sub-areas. Our next problem then is to endeavor to understand what is the historical meaning of this basic pattern of the whole Algonquian hunting area. To be more precise, our task is to endeavor to determine, from the ethnological evidence as previously emphasized, where, when, and how the characteristic features of northeastern hunting culture developed and became integrated. We are not concerned with the very different questions of when and where the Algonquian linguistic stock and the northeastern Algonquian somatological type or types developed.

There are three fairly distinct approaches to our problem, each with its own specific evidence, which three we may call for convenience the snowshoe, the ecological, and the distributional approaches respectively. The snowshoe approach is a phase of the ecological and distributional ones, but the rôle it has played in boreal cultural reconstructions during the last quarter century warrants separate treatment. We shall now take up these three approaches in order.

#### *The Snowshoe Approach*

By the "snowshoe approach" we here refer to Birket-Smith's theory—a development of Hatt's "inland" and "coast" hypothesis—that the culture of the taiga or boreal coniferous belt of Eurasia and North America, including our northeastern area, represents a temporally stratified blend of an earlier "ice-hunting" or "ice-fishing" culture and a later supervening

<sup>23</sup> Skinner, 1920b, p. 12; Kinietz, 1940, pp. 160, 215, Mandelbaum, 1940, p. 279, and Hallowell, 1936, p. 33.

"snowshoe" culture.<sup>24</sup> This very stimulating theory has won wide, if reserved, acceptance.

Birket-Smith, like Hatt, Steensby, Mason, and others before him, has notably clarified our insight into circumpolar culture by focusing attention on the crucial rôle of the snowshoe in the life of the peoples of the Eurasian and North American boreal forests.<sup>25</sup> Without some kind of at least crude wooden or frame snowshoe on which to travel over the soft deep snows of the northern forest, the hunter would be relatively immobilized during the winter months. His winter food-quest would be largely confined to ice-fishing on the inland lakes and rivers. It is the snowshoe that makes it possible for him to travel about on the snow and so to carry on his hunting and trapping of land game. This inland winter economy of the forests, with its dependence on wood for heating and cooking, fundamentally contrasts, as Birket-Smith and others have well pointed out, with the coastal winter ice-hunting economy of the Eskimo north of the wooded belt, with its dependence upon the animal-fat lamp for heating and cooking.

To define these two contrasting subsistence systems, each with certain associated traits, Birket-Smith proposed the terms "ice-hunting" or "ice-fishing" and "snowshoe" culture, to substitute for Hatt's corresponding earlier terms, "coast" and "inland" culture.

Birket-Smith, however, goes beyond the purely descriptive and analytical. Like Hatt, he holds that the ice-hunting culture preceded in time the snowshoe or inland culture, in the sense that before the invention of the snowshoe the inland peoples had to rely for their winter subsistence on relatively sedentary ice-fishing on lakes and rivers, and that when later the snowshoe was invented or introduced it wrought a profound revolution in this inland culture by making possible the pursuit and exploitation in winter time of the rich land fauna of the taiga.

With the snowshoe, according to the theory, have spread a number of cultural elements, such as moccasins, toboggans, bark canoes, conical tents, folded-bark baskets, blunt-headed arrows, two-handed scrapers, hair embroidery, bear ceremonialism, scapulimancy, and so forth.<sup>26</sup> The list differs

<sup>24</sup> Birket-Smith, 1918-1936, especially 1918, 1929, 1930a; Hatt, 1914-1934 (1934 being a summary giving Hatt's latest view).

<sup>25</sup> Mason, 1896, p. 381; Steensby, 1916, p. 179; Hatt, 1916b, p. 249; Birket-Smith, 1918, pp. 177, 180, 183, 219, 1929, pt. 2, p. 213, 1936, pp. 193-94.

<sup>26</sup> Birket-Smith, 1930a, p. 12, 1936, pp. 194-96; Birket-Smith and de Laguna, 1938, pp. 518-19; Hatt, 1934, pp. 2757-58.

somewhat among different exponents and adopters of the main theory. This complex of elements constitutes the "snowshoe culture." The Eskimo never adopted the snowshoe culture as such, but only certain elements thereof and these only locally and much later; their culture is an outgrowth of the more archaic ice-hunting culture. The northeastern Algonquians or their cultural ancestors, like other North American and Eurasiatic inland boreal peoples, had shared also originally in the ice-hunting culture, but later took over the snowshoe culture, retaining however even to the present a good deal of the earlier ice-hunting culture. Their modern or historic culture is thus a blend of two distinct cultural strata, the earlier ice-hunting complex and the later snowshoe one.

Elements have been assigned by Birket-Smith (and others) to the snowshoe or ice-hunting culture chiefly on the basis of geographical and tribal distribution, if I interpret him (and them) correctly,<sup>27</sup>—to the snowshoe culture if the distribution of the element is roughly coterminous with that of the snowshoe, to the ice-hunting culture if of wider distribution, particularly if widespread among the Eskimo as well. Into detailed consideration of each of these elements we have not space here to enter, nor shall we discuss the none-too-secure theoretic basis of such attributions. Instead we shall confine attention to the inferred time and place of origin of the key element in the snowshoe culture, the snowshoe itself.<sup>28</sup>

The snowshoe, in Birket-Smith's theory, as in some of the other theories of its history, is assumed to have a unitary origin, that is, to have been invented but once in human cultural history and to have diffused from this one center, presumably in the taiga belt of Asia. More specifically, in view of Hatt's theory of the place of origin of the moccasin, it originated somewhere in the Lake Baikal region. It is further assumed to have had an origin appreciably more recent than that of the more archaic ice-hunting or ice-fishing culture.

The evidence advanced for the unitary origin of snowshoes is two-fold; first, they have a continuous distribution over northern Eurasia and northern North America, particularly although not exclusively in the taiga; secondly, they do not occur elsewhere in the world. Neither line of evidence, the present writer feels, is sufficiently strong to establish probability.

<sup>27</sup> Birket-Smith, 1929, pt. 2, p. 215; Birket-Smith and de Laguna, 1938, pp. 516–18.

<sup>28</sup> Our most thorough study of the snowshoe, especially the frame snowshoe, is Davidson's monograph, 1937. Cf. valuable pioneer study by Mason, 1896, pp. 381–410, and brief recent review by Montandon, 1934, pp. 580–85, and 1936. For distribution of wooden snowshoe, see, besides Davidson, 1937: Birket-Smith, 1929, pt. 2, pp. 36–37; Nansen, 1890, map, v. 1, opp. p. 91; Laufer, 1917, pp. 117–19.

As for the first, such continuous distribution does obtain, but is it continuous distribution of the *same* element? Under the general caption of "snowshoes" are grouped a great number of types of foot-attachments that keep the wearer from sinking in snow. These types manifest a bewildering variety of form,<sup>29</sup> from the wooden ski types to the netted frame ones, from the Cantabrian mountain and Swedish ladder type to the Czechoslovakian and Yugoslavian wicker one, from the Norwegian truger, to the Ainu and Japanese hour-glass, and other forms of "bearpaw" snowshoe, this last term itself a very comprehensive one embracing many types with curvilinear (rather than angular) rims, not to mention the Pehuenche and Ona types to be noted infra, of whose precise form we do not have information. These divergences moreover are just as marked, if not more so, among the cruder types as among the more developed ones. Continuous distribution suggests unitary origin where the element so distributed is sufficiently uniform and diagnostic, but otherwise permits no conclusion.

As for the second line of evidence, actually the snowshoe is also found elsewhere than in the Eurasian-American taiga. We have at least two records of it in South America, among the Pehuenche and among the Ona. The Andean cordillera was, according to Rosales, uninhabited in his day for more than 200 leagues south of the Peruvian frontier, that is, to 38° S. lat., where in the higher valleys between the two main ranges of the cordillera lived the Pehuenche. In deep snow, he records, the warriors "passan poniéndose unos zapatos que hazen de coleos, anchos como chapin, con que pasan sin undirse en la nieve quando quieren."<sup>30</sup> Gusinde writes of the Onas of Tierra del Fuego: "Um in sehr lockeren, tiefen Neuschnee nicht einzusinken, bindet man sich vorübergehend ein kleines Bündel dichter Zweige an die Sandalen und nennt dies չóše ke չámni-Schneeschuhe."<sup>31</sup>

I have come across no other records of the snowshoe in South America, but on the other hand it is questionable whether there is any other people of South America whose habitat and subsistence economy would demand the use of snowshoes or find them of appreciable value. There is plenty of snow inland in the territory of the canoe-using Yamana and Alacaluf, but when on land they keep pretty closely to the shore line and do not hunt or

<sup>29</sup> See descriptions and illustrations in Davidson, 1937, Mason, 1896, and Montandon, 1934 and 1936.

<sup>30</sup> Rosales, 1877-78, vol. I, pp. 197-98. Coleos = "cañas brabas" (*ibid.*, vol. I, p. 161) = *Chusquea* sp. (cf. Lenz, 1904-10, pt. I, pp. 200-1), a grass growing up to several meters high with hard thick stalks. Chapin = clogs, pattens (cf. Espasa, n.d., vol. 16, p. 1557).

<sup>31</sup> Gusinde, 1931, p. 215.

travel to any extent in the snow-covered uplands. As to whether the early pre-horse Tehuelche, like their linguistic and cultural kin, the Onas, ever used or needed to use snowshoes, our exceedingly scanty earlier records are silent; since the early eighteenth century when the Teheulche acquired the horse, they have had no need for snowshoes.

We may perhaps go farther and risk the generalization, albeit with reserve, for we are dealing often with a delicate balance of type of snow and type of subsistence quest, that some kind of at least crude and makeshift "snowshoe" is found wherever the subsistence quest demands much traveling over snow of the very particular kinds on which the snowshoe would be of critical value. The comparative absence of it on the Northwest Coast may well be due, not to historic reasons, but to the fact that the natives there are predominantly a shore-line people, whose subsistence quest does not carry them much into the snow-clad inland mountains. The comparative absence of it among the Eskimo may well be due, likewise not to historic reasons, as often assumed, but to the fact that while their subsistence quest necessitates much travel over snow, snowshoes are of little or no use on the surfaces over which the Eskimo have to do their winter traveling.<sup>32</sup> Even the inland Caribou Eskimo finds them of value for only about two weeks in the spring when the snow is soft and impassable and he makes very limited use of them.<sup>33</sup>

The foregoing generalization appears to hold pretty well for Pan-America and Eurasia. It may perhaps hold also for Africa and Oceania. For instance, the economy of the Wachagga, on the slopes of snowcapped Kilimanjaro in East Africa does not take them into the upland snowfields. There is plenty of snow in the New Zealand mountains, but the Maori usually avoided ascending the mountains, especially the snow-covered ones, for magico-religious reasons; when however they did cross snow-clad ranges they found it sufficient to use a special form of combined sandal and gaiter. An adequate discussion, however, of the African and Oceanian areas would require a long paper. At any rate, apart from all such bolder generalizations, the fact remains that snowshoes are not confined to the circumpolar, boreal and neighboring regions.

To sum up, it would seem that the evidence for unitary origin of the snowshoe is too weak to establish reasonable probability, and that there is, if anything, an appreciably greater probability in favor of multiple origin, even in the northern hemisphere, of the cruder forms. Furthermore, the

<sup>32</sup> Cf., for instance: Mason, 1896, p. 383; Weyer, 1932, p. 165; Stefansson, 1932, pp. 164-65, 341, 622; Nansen, 1890, vol. 1, pp. 80-82.

<sup>33</sup> Birket-Smith, 1929, pt. 1, pp. 183-84.

cruder forms of "snowshoe" appear, in themselves and from their distribution, to be such "simple" inventive adaptations to environment that there is at least an even chance, perhaps a greater, that their discovery and adoption go back in Eurasia to man's earliest or extremely early residence within the Old World taiga. We have no tangible evidence that man lived a long period in the taiga before inventing crude snowshoes. Davidson, in his invaluable monograph on the snowshoe, summarizes the conclusions of Swedish scholars who trace the wooden snowshoe back archeologically to about 2000 B.C. in northern Europe.<sup>34</sup> If their dating be valid, our hypothesis of probable very early invention of snowshoes receives some support from archeology.

From all the foregoing, the theory that the early cultural ancestors of the Indians of the North American taiga lived a long time inland without snowshoes and were confined during this period to ice-fishing on lakes and rivers as their winter subsistence mainstay, and that only later did they acquire snowshoes and with them the means of exploiting in winter the land fauna, would seem to be unsupported by the evidence. If this be the case, the main foundation is gone from under the dependent assumptions that the "snowshoe culture" is more recent than the "ice-hunting culture," and that the modern culture of the taiga Indians, including our northeastern hunters, is a blend in which the older ice-hunting stratum still persists in part under the later dominant snowshoe stratum.

Two final brief notes may be added before concluding this section. First, in view of the continuous and locally delimited distributions, as so thoroughly mapped and documented by Davidson, of such very specific frame-snowshoe traits as rights and lefts, reeving attachment, upturned toe, hexagonal weaving, selvage thong, and toe-hole, it appears more than probable that these features are of unitary and later origin. The same may well be true of the more elaborate Eurasian wooden snowshoes or skis. This is of course very different from assuming unitary and later origin for snowshoes as such.

Secondly, the present paper has nothing to do with the question of Eskimo origins, nor is the writer at all competent to discuss them. The evidence and conclusions suggested in the foregoing pages do, however, have a bearing on the theory that Eskimo culture may represent an evolution from a *pre-snowshoe* ice-hunting stage. If, further, anyone should care to propose the very speculative hypothesis that the proto-Eskimo or pre-Eskimo cultural ancestors of the historic Eskimo were an inland people

<sup>34</sup> Davidson, 1937, pp. 138-40.

dwelling in the Asiatic taiga and using some crude form of wooden or frame snowshoe, and that they gave it up on emerging out onto the tundra and coast where it was not needed, the ethnologist would have no evidence of his own with which to challenge the speculation, although of course none with which to confirm it. The last word would have to be up to the archeologist of tomorrow.

### *The Ecological Approach*

We now turn to the ecological approach for such clues as it can give to the origin or development of at least some phases of northeastern hunter culture, particularly those connected closely with the subsistence quest.

Northeastern hunters, like most other human beings, have the will to live. One might add parenthetically, even more than most other human groups, as in the northern sections of the area suicide is unknown. The chief necessity for living is food, here as elsewhere. Grave suffering and even death from famine have been commonplaces in the area. Almost exclusive reliance for food is upon local fauna. The local flora is of quite minor consequence in the native diet. The basic element therefore in the northeastern environment that bears upon culture is the local Hudsonian and Canadian zone fauna. The main food animals are the moose toward the southern border and the caribou toward the northern. Other important ones are the black bear, beaver, porcupine and otter, and, in some places, geese, ducks, seals, and eels. Snowshoe rabbits, grouse, and ptarmigan help appreciably in the dietary. The chief fish relied upon are whitefish, trout, salmon, pike, pickerel (doré), sturgeon, loche, and sucker. Blueberries which grow in great abundance over large parts of the area are eaten in considerable quantities in the late summer and early fall, and some are dried and kept for winter eating, especially with bear grease.

Given this group of staple foods, two things follow automatically, a summer and winter cycle, and a great deal of traveling around to exploit the food resources.

Pelts and furs are poor in summer and, excepting the bear, the furbearing and game animals give birth to their young from late April to June, so most trapping and hunting of land fauna are carried on to more advantage during the other parts of the year. Meat and fat of most land animals is better, too, from early fall to late spring. In winter, fish are caught under the ice with gill net and hook. In the olden days and to a certain extent even at present, it is in the late winter and early spring when the heavy crust forms on the snow that the Indian can best pursue and bring down the moose and caribou. After the more strenuous labors of the winter, the

summer is a time of relaxation, with greater dependence upon fishing and, in the late summer, upon berrying.

In some sections of the northeastern taiga, such as the hinterlands of the Gulf of St. Lawrence, and of Hudson and James Bay, the natives hunt inland from fall to spring and come out to the coast in the summer. This summer coastal migration and residence—this residence varying, for instance, on the east coast of James Bay from only a week or two to three or four months, depending on the distance of the family's hunting ground from the coast—are very largely conditioned by the exigencies of the fur trade, in particular the location of trading posts. In sections where trading posts are located inland, there is no such routine coastward migration in the summer. The summer-winter cycle of the northeastern subsistence economy is immediately dependent upon aboriginal adaptation to ecology and is probably very ancient, but the inland-coast phase of the cycle, where it exists, is more likely in the main a modern development consequent upon the post-contact white fur trade. It is very doubtful if pre-contact trade could have brought about such summer coastal migrations, except perhaps here and there locally. Such inland-coast seasonal alternation of the northeastern Indians as exists, seems, thus, in spite of superficial resemblances, to be a fundamentally different phenomenon from the Eskimo inland-coast alternation, which latter is basically a function of the aboriginal subsistence quest for consumption rather than of trade.

No matter how perfect the trap which the northern hunter should invent—and he knows a great variety of ingenious snares, deadfalls, and other traps—game animals and furbearers would not beat an eager path to his tent-door. He has to go after them. He must travel. He need not necessarily be nomadic in all parts of the area and at all times of the year in the sense of being obliged constantly to shift his dwelling. But he does have to fare far and wide.

In summer he needs a type of watercraft that is light enough to be carried on human shoulders, for travel by land through the tangled forest and yielding muskeg is difficult; he must travel by water. He must follow water-courses broken with rapids and falls and must cross heights of land from lake to lake. A dugout, on account of its weight, would be useless. The light bark canoe, of the bark of the canoe-birch, is the normal aboriginal means of summer transport. The Attawapiskat Cree, whose country is lacking in large birches, used to build in the spring crude makeshift canoes of spruce bark to come down the river with their families and pelts to the coastal trading posts, and would then return afoot to their family hunting grounds for the fall and winter hunt.

In winter, travel is through the woods where the snow lies deep. To travel with ease the hunter and his impedimenta must be supported on broad bases with a smooth undersurface that permits easy going, without sinking, over the surface of the snow. The answer is the snowshoe and the toboggan. Without these or their equivalent he would be relatively immobilized.

For snowshoe use, soft-soled footwear is imperative. The moccasin meets the need. Stiff-soled footwear, such as characterizes the Plains culture, would be a handicap. For summer use the moccasin has some disadvantages. It absorbs moisture from the wet ground like a blotter. On the other hand, it gives excellent foot-grip in poling, rapid-running, boarding, landing, and general managing of the canoe as also in carrying canoe and packs over steep or slippery portages. The moose or caribou skin of which the moccasin is made is "tanned" by a final smoking; otherwise, after becoming wet, it would dry out hard and stiff.

Clothing is (or was) of moose or caribou hides, of pelts of furbearers, and of woven rabbit skin. Skins and birch bark serve as tent covers. The wood of birch and of the conifers is preferred for cooking and heating. Birchwood is particularly in demand for toboggans and snowshoe frames; cedar, where available, for canoe frames. Dishes and containers are chiefly of birch bark, or, in its absence, of other barks.<sup>35</sup>

There are a great many other features of northeastern culture, both material and non-material, that are conditioned by or evidence close adaptation to the northern environment. For instance, there are many magical and irrational ways of bringing the north wind, which is so important during the late winter for forming a crust on the snow to enable the hunter to overtake large game. Intimately related, too, to environment seems to be the fact that there is a multiplicity of rites and observances in the hunting of large game animals and of furbearers, where luck in hunting is nearly always a question-mark, whereas there is little in the way of ritual as regards fishing and nothing as regards berrying, quests which in most parts of the area are pretty certain to yield dependable results.

To simplify our problem, however, we shall confine attention to the interpretation of those basic and characteristic features of the northeastern subsistence quest touched upon in the preceding pages: summer-winter cycle in the sense explained, predominant animal diet, bark canoe, snowshoe, toboggan, moccasin, skin clothing, bark- and skin-covered shelter, wood

<sup>35</sup> For other analyses of cultural adaptation to environment see: Steensby, 1916, pp. 176-84, taiga peoples in general; Birket-Smith, 1918, pp. 176-86, northern Algonquians; Speck, 1926, p. 305, Montagnais-Naskapi.

fires for cooking and heating, bark dishes and containers. For convenience of reference in the present paper, we are calling this complex the *taiga economy*.

Our problem is: When and where were the elements in this "taiga economy," as found in the northeast, developed and organized into an integrated whole?

The intimate relationship to and dependence of this economy upon climatic, faunal, and floral conditions within the coniferous belt make it reasonably clear that this development and integration must in the main have taken place somewhere within the circumpolar taiga. This belt extending from Labrador across northern North America and northern Eurasia to Scandinavia, is flanked on the north by the tundra, on the south by open prairie country and deciduous forest. Original development and integration could hardly, in view of the very different ecology of the tundra, the prairie lands and the deciduous forests, have occurred in the belts north or south of the taiga.

So far we seem to be on safe ground. But the further question arises: In what section of the taiga did original development and integration occur? The basic taiga economy as found in the northeast prevails over the boreal coniferous belt from Labrador to Scandinavia. There are, of course, regional differences, for instance, the characteristic sledge, boot and wooden snowshoe of northern Eurasia instead of the toboggan, moccasin, and frame snowshoe of northern North America. But fundamentally the taiga economy of both continents represents a unit pattern and a complex adaptation to environment that are strongly suggestive of unitary origin, although multiple origin of some features of the complex is of course not barred.

Assuming unitary origin, at least in the qualified sense just noted, for the circumpolar taiga economy as such, it would be unwise to attempt to define with any confidence the precise region within the whole taiga where this basic economy first arose and developed. Presumably, in view of the accepted Asiatic origin of the North American Indian, this took place somewhere in the Eurasian belt and spread to America, rather than the reverse. But to locate its origin at any one particular area within the Eurasian taiga, as the Lake Baikal or another region, would, it seems to the present writer, be going far beyond any significant ethnological evidence we have.

The question of the center of dispersion of the Algonquians, and in particular of the northeastern Algonquian culture, is naturally tied up with this much broader question of the original center of dispersion of the taiga economy as such. That *an* important center, or *the* center of dispersion of the Algonquians or of the northeastern Algonquian culture was to the west

or southwest of Hudson Bay is not an impossibility, but this is about all we can say. The inference that this region was *a* or *the* earlier center of Algonquian dispersion is based largely and ultimately on the supposition—invalid, we believe—that the “snowshoe culture” is later than the “ice-fishing” one. If the original home of the taiga economy was, as seems more probable, in the Old World, then it seems hardly profitable to discuss its center of dispersion in the New World. At best, one could discuss its route of dispersion, with possible stopping places. This route was presumably in an easterly direction following the west-east lay of the North American taiga, but there appears to be no specific evidence of stopping places on the way. For all we know, it may have been a fairly steady drift. Who the first carriers of it were—Algonquians, proto-Algonquians, non-Algonquians—we have no good ethnological grounds for inferring. At this point the problem of northeastern Algonquian cultural origins becomes tangled with that of Algonquian linguistic origins, and this latter problem is in turn embedded in the still larger one of the origin, monogenetic or polygenetic, in Asia or in America, of American linguistic stocks.

As to when the Eurasian-American taiga economy as such first arose, only the most vague and general estimates are possible. From the ethnological evidence of extensive intercontinental distribution, it probably goes far back. From the archeological evidence, provisional *minimum* ages of about two or four millennia may be reasonably inferred. For the snowshoe, a key element in taiga economy, is found archeologically, as previously noted, at an estimated date of circa 2000 B.C. in northern Europe.<sup>36</sup> Another key element, the toboggan, occurs, made of long strips of baleen, in the Old Bering Sea Eskimo culture, tentatively estimated as of circa 1 A.D.<sup>37</sup> From combined ethnological and archeological evidence, we have some fair ground for inferring that the taiga economy is at least a couple of millennia old. For, since about the beginning of the Christian era, if the archeologists' estimates may be accepted, the Bering Strait bridgeheads have been occupied by Eskimo. Since such occupation, intrusion from northeastern Asia into America of carriers of the taiga economy through or around the Eskimo holders of the bridgeheads, while conceivable, does not appear probable.<sup>38</sup> Actually, then, we have here an instance of split distribution, indicating that the taiga economy is at least older than the occupation of the Bering region by the Eskimo. We may tentatively conclude therefrom that the taiga economy as such is very old, dating back at least two or four millennia.

As regards, however, certain features of northeastern culture that are

<sup>36</sup> See footnote 34 supra.      <sup>37</sup> Collins, 1940, p. 545.

<sup>38</sup> Jenness, 1937, p. 30, 1940, p. 1.

closely connected with the taiga economy, we have fairly good reason to conclude that these are of local and of more recent origin. Of these features we shall single out for detailed discussion just one, but a very fundamental one, namely, the family hunting ground system.

The relationship of this system to the environment may be perhaps best made clear by an analysis of the situation that obtains today over large parts of the northeastern hunting section, north of the St. Lawrence and the Great Lakes. Nearly everywhere among the Indians of the area there is extreme pauperism in the form of scarcity of food, pauperism due mainly to the fact that the land has been largely stripped of its food and fur game. This stripping is the result of the introduction of firearms, commercial pressure from the outside for furs, and other factors. But a major, perhaps the major, factor that is immediately responsible for the stripping is the breakdown of the native conservation system, namely, through sparing and through rotation. This conservation system in turn has broken down largely as a consequence of the breakdown of the land tenure system, which has prevailed throughout nearly all of the area, except the northernmost semi-tundra region.

The functional relation between the conservation and the land tenure systems may be best made clear through a concrete illustration. Several years ago an old Moose Factory Cree Indian told me that three years previously he had located a beaver lodge on his family hunting ground. He then went on to say: "I was going to take the beaver, because I had had little luck that winter. But I thought it over and decided to wait a year until they had bred and increased. I went back to the spot next year and thought of taking the beaver, but I decided I would let them breed one more year and I would then have a good number of beaver this third year. But when I went back I found that someone else had come in and taken all my beaver." Then he added emphatically: "The next time I find a beaver lodge on my land I will take the beaver at once and take all of them."

To carry our analysis to its last step, the family hunting ground system itself is conditioned by the more important fauna exploited in the northeastern area.<sup>39</sup> Over most of the area the fauna exploited (apart from the caribou, a matter to which we shall return in a moment) is non-migratory,

<sup>39</sup> The first, to my knowledge, to call attention to this conditioning was Rae (1882, pp. 274-75) in the course of a brief discussion. I have seen no mention of Rae's laconic but significant statement in the later literature on North American land tenure, and came across it by chance after having had the conditioning suggested to me by field work in the James Bay and MacKenzie areas.

non-gregarious, of relatively restricted home range, of relative scarcity, exploitable more or less uniformly over the whole territory and by dominant use of solitary rather than group hunting and trapping methods. Under such a combination of conditions some type of tenure in severalty with permanent or seasonally-limited rights of exclusive exploitation is ordinarily the one best adapted to meet the subsistence needs of the people. The reasons therefor are obvious enough and have been dealt with in some detail in a previous study by the present writer.<sup>40</sup> Such tenure in severalty may be along the lines of the family hunting ground system, the allotment system, or the trapline system; all three systems contrasting with outright communal types of tenure. These latter are more efficient economically where the staple fauna exploited is migratory, markedly nomadic and/or gregarious.

Actually we see a striking exemplification of these contrasting ecological adaptations in the northeast area itself. As you pass northward up the Labrador peninsula, the trees thin out as you approach the tundra, the fur-bearers gradually disappear and become less and less important in the native economy, and the migratory, gregarious caribou becomes the dominant object of the hunt. Closely paralleling this ecological cline is the cultural one: the family hunting ground system itself thins out, so to speak, weakens, and in the far north disappears. Somewhat similar phenomena are observable on the west coast of James Bay among the Attawapiskat-Opinaga Cree. These Cree do most of their hunting in the woods, under a family hunting ground system that is definitely operative but seemingly a little weaker than among the Albany and Moose Cree farther south. The Attawapiskat-Opinaga Cree include in their territory a good part of the roughly triangular section of tundra off Cape Henrietta. They make brief excursions into the tundra chiefly to hunt caribou. There are no fur-bearers to speak of on the tundra, except arctic foxes. So soon as these Cree go out on the tundra, however, they hunt where they please. Complete communal tenure prevails, except for spots here and there which have in recent times been preempted by two or three families who have chosen to take up permanent abode on the tundra.

While the family hunting ground system, adapted as it is so neatly to northeastern ecology, pretty clearly ante-dates the coming of the whites,<sup>41</sup> it is, for the following reasons, more than likely not as ancient or archaic as the underlying taiga economy itself.

<sup>40</sup> Cooper, 1939, pp. 86-88; in more detail in 1941, pp. 57-62. See also the highly stimulating discussion by Speck and Eiseley, 1942, pp. 219-21, 238-42.

<sup>41</sup> Speck and Eiseley, 1939; Cooper, 1939.

A system of land tenure in severalty, corresponding along broad lines but not in all details with the family hunting ground system of the northeast, occurs sporadically elsewhere in the North American and Eurasian taiga; among the Orochi, the Samoyed, the Finno-Ugrian peoples including the Lapps, the Tungus, the Tartars, and apparently some of the Athabaskans.<sup>42</sup> This sporadic distribution of family hunting ground system contrasts with the continuous distribution of the taiga economy as such. Actually indeed the fundamental idea of the family hunting ground itself, apart from certain particular aspects of it, appears relatively "simple." It is simple from the ideological standpoint as "limited possibilities" here operate; there are only the alternatives of communal tenure and tenure in severalty, although the latter includes three choices: the family hunting ground system, the trapline system, and the allotment system. The trapline and allotment systems are of extremely limited distribution among hunting peoples, confined, so far as we know, to two or three small marginal regions of the northeastern area and to the Mackenzie Athabaskans. The idea of the family hunting ground system also appears "simple" from the facts of distribution. For actually systems fundamentally in agreement with the northeastern family hunting ground system are of widespread distribution among marginal hunting peoples elsewhere in the world: in South America, Africa, and Oceania, as well as in Eurasia and North America.<sup>43</sup> Then, too, although the point is not urged, it may not be entirely without significance that the correlate of hunting ground systems is very widely prevalent among animals and birds.<sup>44</sup> Finally, owing to the markedly loose band organization among so many of these marginal hunting peoples, including our northeastern Indians, it is to no small extent a mere matter of words whether you call this family hunting ground system a system of land tenure in severalty or a type of tribal land sovereignty, and tribal or band land sovereignty in one form or another is a nearly universal phenomenon among hunting peoples as among non-hunting peoples.

These various considerations and points of evidence suggest that the family hunting ground system as found among the various discontinuously distributed hunting peoples in the coniferous belt of North America and Eurasia, is of multiple rather than of unitary origin, representing local adaptations to differing ecologies and subsistence quests, and that it is not

<sup>42</sup> Cooper, 1939, p. 83, with references to sources, and especially to Speck's first assembling of circumpolar distribution data in 1926.

<sup>43</sup> Cooper, 1939, pp. 83-84, 1941, p. 57.

<sup>44</sup> Heape, 1931, pp. 28-74; cf. Cooper, 1939, pp. 88-89.

integral to the taiga economy as such in the sense that it developed and spread uniformly with this economy. The evidence seems therefore to point with reasonable probability to the conclusion that the family hunting ground system, almost completely coterminous with the area of the Algonquian hunters of the northeast, and absent from most of their western neighbors, the northern Athabaskans, is a later accretion upon the basic taiga economy. To judge from the phenomena of duplex types of tenure—in severalty and communal—as found among even single bands like the Attawapiskat Cree (and I have found a similar phenomenon prevalent among the Chipewyan of the Great Slave Lake region), and from the sharp differences in land tenure types among marginal hunting peoples in the various parts of the world, it looks as if land tenure among hunting peoples is delicately responsive to ecology, especially to the fauna exploited as the staple food supply.<sup>45</sup> It looks likewise as if such tenure can and does adapt and change readily and swiftly in accordance with changing local ecological conditions. If, therefore, the subsistence quest and exploiting methods of the Algonquians or of their cultural ancestors or predecessors when they first reached the northeastern region, were at all similar to what they have been in historic times, and we have no ground for assuming basic differences, then the family hunting ground system may well have developed very soon after their migration into the area.

This last conclusion is presented with a great deal of reserve, in fact with much more reserve than confidence. That, however, the development of the family hunting ground system in the northeast represents a phenomenon appreciably later in time than the development of the boreal taiga economy as such seems to rest on reasonably solid evidence.<sup>46</sup>

To sum up this present section. As regards those phases of the northeastern hunting culture which are most intimately dependent upon ecology, one can on reasonably good evidence infer a double cultural stratification: a very ancient stratum, what we have called the taiga economy, of Asiatic origin, that spread to America with the very early, perhaps the earliest, migrants to the continent; a later stratum, of which the family hunting

<sup>45</sup> Speck and Eiseley, 1942, p. 242, have recently emphasized this same "fluidity" and "sensitive reaction." In 1939, the present writer tentatively suggested (1939, pp. 84-85) the possibility that the family hunting ground system may have been, in view of its distribution in Eurasia and South America as well as in North America, a tarriant phenomenon from archaic times; he feels, however, that, with the fuller light we have since gained on factors underlying the system, (cf. Cooper, 1941, pp. 57-62) such a possibility has become much more remote.

<sup>46</sup> This seems to be the conclusion, too, on partly different grounds, of Speck and Eiseley, 1942, pp. 237-42.

ground system is perhaps the most important element, that developed locally in the northeast and, as compared with the taiga economy, at a much later time, well before the days of the coming of the white man and quite possibly very shortly after the intrusion of the Algonquians or of their cultural ancestors into the northeast.

There are probably a number of other such local later accretions, for instance, the previously mentioned crude spruce-bark canoe used by the Attawapiskat Cree of James Bay who live north of the limit of large birch trees. Likewise there are probably elements other than those listed, which belong to the original taiga economy but the discussion of these details would carry us far beyond the limits of the present paper. Some of these elements will be dealt with, at least indirectly, in the next section of the paper in which we take up the temporal and spatial interpretation of those phases of northeastern culture which are less clearly conditioned by environment or which are relatively independent thereof. Our only satisfactory ethnological methodology for dealing with the interpretation of these elements is the distributional one to which we now turn.

### *The Distributional Approach*

Inferring temporal sequence from spatial distribution is fraught with so many difficulties and hazards and has led to so many erroneous reconstructions that one can understand and sympathize with the position of those anthropologists who prefer to give up the attempt. The present writer, however, shares the view of those others of the craft who consider that with proper safeguards and techniques a good deal of reconstruction is nevertheless possible, though in such reconstruction reasonable probability, rather than certainty, is all that can as a rule be hoped for or attained. And varying degrees of probability are all that is claimed for the sequences suggested in the following pages. At any rate, they may serve as working hypotheses, to be tested by future ethnological and archeological revelations.

That the age-area canon of temporal reconstruction cannot be followed blindly, yet is not wholly invalid, is proven by a great number of specific distributions whose history is known from independent evidence. But we lack a satisfactory working formulation as to precisely when, apart from other independent evidence, the age-area canon can be confidently relied upon. We shall use it, therefore, very sparingly and guardedly, and shall employ other criteria that will be referred to in the proper places as we go along.

For purposes of reconstructive treatment, we shall break up the more characteristic phenomena of northeastern culture into three major groups:

(a) those more or less confined to the northeast or to the North American taiga; (b) those shared with other peoples of the North American and Eurasian taiga, or also with cultures of southern South America; and (c) those shared with the marginal peoples of the world.<sup>47</sup> Major attention will be focused on phenomena of non-material culture. For the reconstructive interpretation of such phenomena we are thrown back almost entirely on ethnological resources; from neither ecology nor archeology can we expect appreciable help toward such interpretation in either the present or the future.

#### a. Northeastern and North American Taiga Phenomena

Certain cultural phenomena are peculiar to and found exclusively or almost exclusively among our northeastern hunters and their cultural kin or near neighbors. One of the most important of these in the native consciousness is the shaking-tent complex. It occurs, in only slightly different form, among the Plains Algonquians, the Blackfoot, Gros Ventres, and Cheyenne, this distribution suggesting origin prior to the separation of these groups from the main Algonquian body. It is basic in Montagnais-Naskapi, Cree, and Otipiwe culture. But we have no clear recorded evidence of it among the Algonquian hunters of the Wabanaki group or among the Beothuk.<sup>48</sup>

Other features of the magico-religious complex peculiar to the northeast are divination with beaver hip-bone and with otter paws; bringing the north wind by placing a nude child outside the tent, and by setting fire to a strip of birchbark tied to a dog's tail. Likewise northeastern are the concepts of *pagak* (*pagaskogan*, etc.) or skeleton being, of *memegwecio*, and of certain features connected with the *wihtiko* or giant-cannibal belief such as the *wihtiko* psychosis and the taboo on children eating ice. Some other elements peculiar, so far as I can discover, to the northeast are: birchbark bitten

<sup>47</sup> It would be quite impossible, within our limits of space, to give the first-hand sources for all the distributions mentioned in the following pages. The northeast distributions are partly from Dr. Flannery's and the writer's own field notes, partly from the published sources. Most of the Eurasian—North American ones we shall use are given in Birket-Smith, 1929, pt. 2, and Birket-Smith and de Laguna, 1938. A good many of the South American ones may be found in Nordenskiöld, 1919–31, vols. 1, 2, 3 and 9, and in the sources given in Cooper, 1941, pp. 10–11, 1942a, pp. 25–26, and 1942b, pp. 155–56; original sources will be given for only some of the less well known South American distributions. On distributions of specific traps, see Cooper, 1938, *passim*.

<sup>48</sup> Hallowell, 1942b; Flannery, 1939b; Ray, 1941; Turney-High, 1941, pp. 174–76, Kutenai; Grinnell, 1923, vol. 2, p. 114, Cheyenne; Cooper, field notes, Blackfoot and Gros Ventres; Lowie, 1922, p. 381, Crow (perhaps Cheyenne influence).

patterns; caribou teeth as children's charms; bad luck to count tent poles; the lynx jaw bone for unlatching snowshoes; the beaver spear downfall and the beaver funnel trap.

Among the more specific and diagnostic elements shared by the northeastern Indians in common with the Northern Athabaskans and seemingly confined fairly well to them are the following: divination with bear patella; bringing the north wind (or snowstorm) through bull-roarer, buzzer, snow rabbit, and teasing or plucking a whiskeyjack; use of foetal inclusions or mummified foetuses in hunting magic; the netted willow-ring to keep colds away from the child or to help him to be a good worker; the northern-raven somersault and the Canada-jay "tcúka-tcúka" call as good luck omens, and killing Canada jays and finding their eggs as bad luck omens; the seesaw trap for Canada jays; the owl-foot toy; the 6-shaped baby rattle; willow fish-nets; conical tipis of split sticks; canoe-repairing with a lighted forked stick; the eyed lenticular snowshoe-netting needle. In both areas too, beaver bones are thrown back into the water.

Further search of our published sources or further information from the field may make it necessary to eliminate some of the foregoing elements which we have listed as more or less peculiar to the northeast or to the northeast and the northern Athabaskan areas—negatives in distribution studies being so notoriously risky—and may also make it possible to add considerably to this list. The distributional picture may change in some details but the broad outlines should remain.

These phenomena are continuously or fairly continuously distributed over the northeastern (or parts of it) and the North American taiga areas respectively and are sufficiently specific and diagnostic. They are seemingly absent from Asia and other parts of the world. There is no evidence that they were formerly present in Asia and were later lost. Some of them are conditioned by peculiar local ecology, such as the behavior of northern ravens and Canada jays. We have reasonable ground for concluding therefore that they originated in the northeastern or North American taiga area respectively or among the cultural ancestors of the peoples now living in the area.

If such be the case, they must have originated after the arrival of the northeastern Indians or of their cultural ancestors in America, and consequently they must represent cultural phenomena more recent in age than the basic taiga economy.

Certain of these elements, particularly the shaking tent, are seemingly absent in the Wabanaki subarea. Speck has suggested that this Wabanaki

area may represent an earlier northeastern center.<sup>49</sup> In this case such elements may be later. An alternative explanation would be that they were lost in the course of time, for reasons unknown.

### b. *Northeastern, Eurasiatic, South American Phenomena*

A considerable number of cultural phenomena found among our northeastern Indians and the northern Athabaskans, are also found among the peoples of the Eurasiatic taiga, but are absent from southern South America. Such are: bear ceremonialism, scapulimancy, the two-handed scraper, smoking of skins as a part of the skin-dressing process, the place of honor opposite the door of the tent, the perch snare, the samson-post deadfall, and the fall net. Bear ceremonialism would hardly be expected in South America, as the only species of bear found there, the Andean spectacled bear (*Tremarctos ornatus*), is absent from areas occupied by marginal hunters.<sup>50</sup>

Certain other cultural phenomena found among the northeastern Indians are absent from or of sporadic distribution in Middle America and northern South America and reappear in southern or southeastern South America, especially among the marginal peoples thereof. Many of these elements are found also among the northern Athabaskans and/or the northern Eurasiatic taiga peoples.<sup>51</sup>

It is not possible within our limitations of space to go into this whole problem in detail. Each element would have to be dealt with minutely. We shall merely list some of those phenomena that are more specific and diagnostic and that are completely or relatively independent of ecological conditions. Such are: fire-making by percussion, stone boiling, spit roasting, rodent-tooth knife; thread tattooing; ring and pin, dart sticker, bullroarer, buzzer, and pop-gun, as toys or games; the "sundial" travelers' trail sign; divination by fire running in powdered charcoal; the sweatlodge; certain specific shamanistic practices such as use of the tambourine; certain specific game-animal observances, such as keeping bones from dogs lest hunting luck fail, conciliatory speeches to game animals, special treatment of wind-pipe, the use of bezoar stones; girls' first menses seclusion with use of back-scratcher, drinking tube, head covering, and charcoal (ashes) face-daubing;

<sup>49</sup> Speck, 1926, pp. 305-11.

<sup>50</sup> Hallowell, 1926; cf. Cabrera, 1940, pp. 141-43, on habitat in South America, slopes of Andes up to about 3000 m. altitude, from western Venezuela to Peru and Bolivia.

<sup>51</sup> General discussion of significance of these distributions in Cooper, 1941, pp. 9-12, 1942a, pp. 25-26, 1942b, pp. 155-57; cf. Jenness, 1937, p. 29.

concept of supernatural "owners" of animals; wasting the meat of game animals strickly forbidden by the Supreme Being, or by the owner or master or spirits of the animals; taboo (apparently magico-religious) on killing young birds; some specific features of the trickster concept, and a number of folklore motifs such as rolling head, hoodwinked dancers, sharpened leg, *vagina dentata*, bungling host, blot-clot boy, (giant) cannibal burnt in fire, world fire, thunder-bird, test to pick father.<sup>52</sup>

The very wide distribution of the two foregoing sets of phenomena in itself suggests considerable age, but from such distribution alone no even approximate chronology could be derived. Actually, however, we are here dealing with split distributions, as there are two major breaks formed by the Eskimo occupation of the Bering Strait bridgehead, as previously noted, and by the broad horticultural belt extending roughly from the Great Lakes in North America to the Chaco in South America. These phenomena, on the assumption that they are sufficiently specific and diagnostic to justify the inference of unitary origin in each case, must antedate the establishment of the two breaks.

Those of the northeastern phenomena that are found in both the North American and the Eurasian or Asiatic taiga would thus have developed not later than the first millennium B.C., if we may accept the archeologists' estimate, previously noted, of length of Eskimo occupation of the Bering Strait region. Given the prevalent even though not exclusive, earlier drift, so far as the somatological, archeological and ethnological evidence reveals it, from Eurasia to America, the probabilities are that these elements, or the majority of them first developed in northern Eurasia and diffused thence to America.

Those of the northeastern phenomena which reappear in southern South America, particularly among the marginal peoples there, would have de-

<sup>52</sup> Fire by percussion: found among Fuegians, Tehuelche (Coan, 1880, p. 50, possibly Fuegian influence), Guayaki, some northeastern Peruvian tribes. Rodent-tooth end-hafted knife: Nordenskiöld, 1919-31, vol. 3, p. 115. Thread tattooing: Eschwege, 1818, vol. 1, p. 198, Coroados. "Sun-dial" traveler's sign: Maniser, 1930, p. 790, Kaingang. Charcoal divination: Henry, 1941, pp. 88, 90-91, Kaingang. Respect observances for game animals: Taunay, 1918, p. 578, Kaingang, bones kept from dogs; Musters, 1871, p. 201, horse meat kept from dogs; Henry, 1941, pp. 85-87, Kaingang, speeches to animals, special treatment of windpipe (cf. bird windpipe observances among Cree and Montagnais of James Bay: Cooper, field notes). Religious taboo on wasting meat: Métraux, 1937, p. 175, Toba-Pilaga; Schmidt, 1926-40, vol. 6, pp. 151, 188, all three Fuegian tribes, and others in North America, cf. vol. 3, p. 75, and vol. 4, p. 272, on Negritos. "Owners" of game animals: Métraux, 1937, p. 175, Toba-Pilaga. Killing young birds: Coan, 1880, pp. 113-14, Tehuelche; Cooper, 1917, p. 157, Alacaluf. Folklore motifs: Lowie, 1940, pp. 421-22; Métraux, 1939, *passim*; Luomala, 1942.

veloped at a period prior to the rise of horticulture and other more advanced practical arts on the American continent. This period could hardly have been more recent than the first millenium, B.C., and may well have been earlier. Most of those of such phenomena that are not found in Eurasia were more probably first developed on the American continent.

Some of the foregoing elements, that is, those of presumptive American origin, would more likely be of more recent age than the taiga economy as such. As for most of the others, of Eurasian origin, no chronological comparison with the taiga economy seems possible. Some of them may be older, some more recent. Gahs has made a very interesting attempt to link up bear ceremonialism with Upper Paleolithic archeological finds,<sup>53</sup> but the evidence looks pretty tenuous, to say the least. As regards two of the aforesighted phenomena, fire-making by percussion and the wasting of game meat considered displeasing to the Supreme Being or to other owners or masters or to spirits of game animals, these may well be more archaic than the taiga economy, since they are found in split distribution, the first also among some of the Australians, the second as a very basic feature of religious culture, not only in southern South America, northern North America and northern Eurasia, but also among some African and Oceanic Negritos. This point brings us to our next section.

### c. *World Marginal Phenomena*

Many phenomena characteristic of northeastern culture are found widely or even consistently or universally among the marginal peoples not only of North and South America and northern Eurasia but also of other parts of the world. Some of these phenomena are positive; others are negative, that is, are significantly absent. A good many are rather general; some are specific and diagnostic.

Among the positive phenomena found in the northeast and also consistently among the marginal peoples of other parts of the world are the following: the family prevalently monogamous with common but limited polygyny, divorce common, incest taboos, and indulgent treatment of children; a broad sex division of labor in which the tasks involving greater muscular strength, greater physical danger and farther travel from home tend to fall to the man, the reverse falling to the woman; good care of the sick; personal property, with ownership by women and small children recognized; plain barter; atomistic political organization, of the loose band type, small in membership, largely made up of kin, tending to be patriar-

<sup>53</sup> Gahs, 1928, pp. 261-63.

chal, and with recognized territorial sovereignty; the concept of "soul" and future life; theistic, manistic and magical beliefs and practices; belief in the clairvoyant and predictive meaning of dreams and in witchcraft causation of disease; "first-fruit" sacrificial offerings of food, especially of game animal meat or grease.<sup>54</sup> To this might also be added a sort of basic social code including: food sharing with one's own and hospitality to the stranger; taboo on insulting, ridiculing, slandering, or maliciously lying about or stealing from one's own; prohibition against killing or seriously maiming one's own, without proportionate provocation, and so forth.

There are certain other elements in northeastern culture, for the occurrence of which among the marginal peoples of the world our evidence is rapidly increasing and which when all the evidence is in may turn out to be very widespread or fairly commonly present among them. These are: the sororate; belief in conception and foetal development only from iterated coitus, and in prenatal impressions; marital abstinence for an appreciable period before and/or after childbirth; respect and shyness customs between parents-in-law and children-in-law blending into institutionalized avoidances; ownership of incorporeal property; prohibition under supernatural sanctions against making fun of or teasing or needlessly inflicting pain on animals, especially game animals; chums; human muscular twitches interpreted as omens; scrying; fire (smoke) signaling; and certain material culture elements, such as blunt-headed arrows and the pole snare.<sup>55</sup>

Besides the positive phenomena there are certain negative ones, that is, absences from northeastern and most world marginal cultures which appear significant in the light of the wide distribution of these phenomena among the non-marginal intervening peoples. Among such phenomena universally or almost universally absent are: sibs, moieties, social stratification, secret and other societies, vocational guilds; interest and rent, currency and markets; symbolic wedding rites; team games; head deformation; alcoholic beverages; ritual and gastronomic cannibalism; animal blood sacrifices and human sacrifice; elaborate ritualism; and, of course, such material culture elements as horticulture, loom weaving, and so forth.

For the temporal interpretation of the foregoing three sets of phenomena, particularly the first and third, as found among the northeastern hunters, we are helped, the writer believes, by the following two criteria or canons recently proposed by him for reconstructing temporal sequence among marginal peoples.

<sup>54</sup> Discussion in Cooper, 1941, pp. 47-49; on South American occurrences, cf., e.g., Gusinde, 1931, pp. 512-13, Selk'nam; Smith, 1855, p. 275, Araucanians.

<sup>55</sup> Pole snare: Birket-Smith, 1929, pp. 329-30; Cooper, 1938, pp. 15-18.

*Canon 1.* (a) Where a given cultural phenomenon, especially if found consistently or very widely distributed among intervening or adjacent non-marginal peoples, is consistently absent from present-day marginal cultures, it was probably absent from early prehistoric human culture as such. (b) The probability of such early prehistoric absence is augmented where the factors underlying the given phenomenon can be assumed on probable grounds to have been inoperative among the cultural ancestors of the present-day marginals and in early prehistoric times.

*Canon 2.* (a) Where a given cultural phenomenon is consistently found among present-day marginal peoples, it was probably present in early prehistoric human culture as such. (b) The probability of such early prehistoric presence is augmented where the factors underlying the given phenomenon can be assumed on probable grounds to have been continuously operative among the cultural ancestors of the present-day marginals and to have been operative in early prehistoric times.<sup>56</sup>

The evidence from which these proposed canons or criteria are derived has been presented at considerable length in the paper in which the canons are formulated, so will not be reviewed here. In so far as these canons may be valid, we may infer that the foregoing positive and negative phenomena in northeastern culture represent tariances from very archaic times. More precisely, these phenomena, or most of them (and perhaps others could be added), appear to be older than the taiga economy as such, unless we should assume that human culture first developed in and diffused from the Old World taiga belt, which would conflict with our paleontological evidence.

While the two canons give us some clue to the time of earlier development of these seemingly very archaic aspects of northeastern culture, they give no clue whatever to the locality of earlier development thereof. All that can be safely inferred is that this occurred in the Old World, somewhere outside the taiga.

So much for the distributional approach. But before concluding the present paper we may take time to touch lightly on two points pertinent to our problem.

The first is the hypothesis that the Algonquians, including our northeastern groups, represent more ancient migrants into America from northeastern Asia as compared with the Na-dene. The chief evidence for the hypothesis is the geographic lay of the Na-dene, particularly of the northern Athabaskans, athwart the main routes of ingress from Siberia to America. This fact would carry some weight if we could on cogent grounds assume that Na-dene and Algonquian, or even Na-dene only had differentiated in

<sup>56</sup> Cooper, 1941, pp. 63-64.

Asia and had been carried by migrants into America. But unless or until the linguists can present such cogent ground for the assumption, the above hypothesis, which presupposes it, appears bereft of tangible support. Further, the criterion seemingly involved, namely, the nearer to point of ingress, the later the period of arrival, would involve us in much embarrassment if we were to begin applying it to the other linguistic stocks of North, Middle, and South America, no matter how much we reduce their number.

An equally unsolved problem is that of the relation of northeastern hunter culture, and for that matter of northern Athabaskan too, to Eskimo culture. Speck has listed elements common to the northeastern hunters and the adjacent Eskimo; Birket-Smith, elements, mostly of material culture, common to the Algonquian and Athabaskan hunters and to the Eskimo.<sup>57</sup> Many of these elements are due to more recent influence of Eskimo on Indian and vice versa. But many others appear to go back to more ancient times. Whether, however, in such more ancient times the major direction of influence was from Eskimo to Indian or from Indian to Eskimo, or whether there was parallel derivation from a common source, we seem to have no definitive or even probable ethnological ground for concluding. Still less, the writer believes for reasons discussed earlier in the present paper, can we with confidence single out any specific locale, such as the region west or southwest of Hudson Bay, as the chief area where very early Indian-Eskimo cultural osmosis or parallel derivation occurred. Maybe some day the archeologist will be able to clear up the problem—maybe not.

### SUMMARY

1. The major post-contact migrational and cultural shifts among the northeastern hunters have been listed. The assumptions that the Montagnais-Naskapi are relatively recent migrants into the Labrador peninsula and that the Eskimo formerly occupied the east coast of James Bay do not appear supported by the available evidence.

2. The two sub-areas, the Wabanaki to the east and the Otchipwe to the west, appear to represent the more primitive hunter culture with an overlay of later accretions, some pre-contact, some post-contact, from adjacent more developed cultures to the south and west.

3. The theory that the culture of the American taiga belt, including the culture of the northeastern hunters, is a stratified blend of an earlier ice-hunting or ice-fishing culture stage and a later snowshoe one does not appear sufficiently supported by the evidence.

<sup>57</sup> Speck, 1926, pp. 292-97, 1936, pp. 326-28; Birket-Smith, 1929, pt. 2, 1930b, pp. 102-8; cf. Strong, 1930, and Jenness' comments thereon, 1940, p. 4.

4. The ecologically-conditioned subsistence system which we have called for convenience the "taiga economy" and which is shared by the northeastern hunters had its origin somewhere in the taiga, more likely the Eureasiatic section thereof, and in very ancient times, at least two to four thousand years ago and perhaps much earlier. It has spread to the limits of the Eurasian and North American taiga.

5. On ecological grounds it is probable that the northeastern family hunting ground system, while antedating the period of white contact, represents a local development in the northeast, more recent in origin than the pan-taiga economy as such.

6. On distributional grounds: (a) Certain phenomena of northeastern hunter culture, peculiar to the northeast or to the North American taiga peoples, are provisionally assigned origins within the North American taiga, at a period later than that of the development of the pan-taiga economy. (b) Certain others, found also in the Eurasian taiga, probably originated therein; others, found also in southern South America, but not in Eurasia, probably developed in the New World. Both sets of elements, occurring as they do in split distribution, go back to at least the first millennium B.C.; the latter set, of presumptive development in the New World, probably originated later than the taiga economy as such; as for the former set, of presumptive Old World development, no chronological comparison with the taiga economy as such seems possible. (c) Some other phenomena, positive and negative, shared by the northeastern Indians in common with other marginal peoples of the world, probably antedate in origin the rise of the taiga economy but we have no ethnological clues to locale of origin, except that this locale was not in the taiga itself.

7. In general, using the "taiga economy" as a basis of comparison for pre-contact reconstructive interpretation of northeastern hunter culture, we have proposed a triple stratification in this culture: the taiga economy, of remote origin, at least two to four millennia ago, in the Eurasian taiga; a stratum or strata more recent in age than the taiga economy, of North American origin; and a stratum or strata more archaic than the taiga economy, of Old World origin outside the taiga belt.

8. The hypothesis of more recent arrival of the Athabaskans from Asia, as compared with the Algonquians, must await settlement of more fundamental problems by the linguists; the more ancient genetic interrelations of Algonquian(-Athabaskan) and Eskimo cultures will have to be determined, if ever, by the archeologists.

The foregoing conclusions are suggested with great reserve. They appear to rest on plausible to reasonable evidence. At the worst, they may fulfil the

modest function of working hypotheses. But whatever may happen to these reconstructive conclusions or hypotheses as we acquire better understanding of the facts we have and as new facts are revealed by ethnology, archeology, linguistics and somatology, the writer is profoundly convinced that to interpret historically the northeastern hunter culture, or for that matter any other single culture of North America, we must reckon also with South America; that is, pan-America must be viewed as a cultural unit. And not only must South America be taken into account, but also Asia, and in fact world culture as a whole. For northeastern hunter culture, like any other regional or tribal culture, has its historic roots deep down in the ecumenical cultural continuum.

CATHOLIC UNIVERSITY OF AMERICA  
WASHINGTON, D. C.



## BIBLIOGRAPHY



## BIBLIOGRAPHY

ADAMS, ROBERT McCORMICK

1941. "Archaeological Investigations in Jefferson County, Missouri 1939-40." *Transactions of the Academy of Science of St. Louis*, Vol. 30, No. 5, pp. 151-221.

ADAMS, W. H.

1880. "Mounds in the Spoon River Valley, Illinois." *Annual Report of the Smithsonian Institution for 1879*, pp. 368-370, Washington.

AHENAKEW, E.

1929. "Cree Trickster Tales." *Journal of American Folklore*, Vol. 42, pp. 309-353.

ALEXANDER, HARTLEY B.

1916. North American [Mythology] *The Mythology of All Races*, Vol. X, Boston.

ALFORD, THOMAS WILDCAT

1936. *Civilization*. Edited by Florence Drake. Norman, Oklahoma.

ALGER, ABBY L.

1893. "The Creation." *Popular Science Monthly*, Vol. 44, pp. 195-196.

ALLEN, LOUIS

1931. "Siouan and Iroquoian." *International Journal of American Linguistics*, Vol. 6, pp. 185-193.

ANASTASI, ANNE

1937. *Differential Psychology*. Chapter 7. New York.

"Annual Archaeological Report," Appendix to the Report of the Minister of Education, Ontario, for 1891, 1894-95, 1895, 1896, 1917," Toronto.

"Annual Reports of the Commissioners of Indian Affairs." Washington.

ANTEVS, ERNST

1922. *The Recession of the Last Ice Sheet in New England*. American Geographical Society, Research Series, No. 11, New York

1925. *The Retreat of the Last Ice Sheet in Eastern Canada*. Canada, Department of Mines, Geological Survey, Memoir 146, No. 126 Geological Series, Ottawa.

1939. "Late Quaternary Unwarpings of Northeastern North America." *The Journal of Geology*, Vol. 47, pp. 707-720.

1943. "Johnson et al., The Boylston Street Fishweir, A Review." *American Antiquity*, Vol. 8, pp. 304-307, Menasha.

AUER, VAINO

1930. *Peat Bogs in Southeastern Canada*. Canada, Department of Mines, Memoir 162, Ottawa.

BABA, OSAMU

1934. "Archaeological Excavations in the Shimushu Islands (Kuriles)." *Journal of the Anthropological Society of Tokyo*, Vol. 49, No. 556. [In Japanese]

1936. "A Second Archaeological Investigation at Shumshir, an Island of the Kuriles." *Journal of the Anthropological Society of Tokyo*, Vol. 51, No. 581. [In Japanese]

BACQUEVILLE DE LA POTHERIE

1753. *Histoire de l'Amérique septentrionale*. 4 vols. Paris.

BAERREIS, DAVID A.

1940. "The Neosho Focus." *Society for American Archaeology Notebook*, April, 1940, pp. 108-9. Mimeographed.

- BAHDER, OTTO  
 1929. "Zur Erforschung der Neolithischen Wohnplätze im Okatale." *Eurasia Septentrionalis Antiqua*, Vol. 4, pp. 90-101.
- BAILEY, ALFRED G.  
 1937. *The Conflict of European and Eastern Algonkian Cultures, 1504-1700*. Monographic Series, No. 2, Publication of the New Brunswick Museum, St. John, New Brunswick.
- BAILEY, JOHN H.  
 1939. "A Ground Slate Producing Site near Vergennes, Vermont." *Bulletin of the Champlain Valley Archaeological Society*, Vol. 1, No. 2, Fort Ticonderoga.
- BAKER, FRANK C., JAMES, B. GRIFFIN, RICHARD G. MORGAN, GEORG K. NEUMANN, and JAY L. B. TAYLOR.  
 1941. Contribution to the Archaeology of the Illinois River Valley. *Transactions of the American Philosophical Society*, n.s. Vol. XXXII, pt. 1. Philadelphia.
- BARBEAU, CHARLES MARIUS  
 1915 *Classification of Iroquoian Radicals with Subjective Pronominal Prefixes*. Canada, Department of Mines, Geological Survey No. 56, Anthropological Series, No. 7.
- BARRETT, SAMUEL ALFRED  
 1933. *Ancient Aztalan*. Bulletin of the Public Museum of the City of Milwaukee, Vol. 13.
- BARTON, BENJAMIN SMITH  
 1799. "Letter to the Reverend Joseph Priestly Containing Observations and Conjectures Concerning Certain Articles Which Were Taken Out of an Ancient Tumulus, or Grave, at Cincinnati." *Transactions of the American Philosophical Society* (o.s.) Vol. 4, pp. 181-215.
- BEAUCHAMP, WILLIAM MARTIN  
 1897. *Polished Stone Articles Used by the New York Aborigines*. Bulletin of the New York State Museum, Vol. 4, No. 18, pp. 5-102, Albany.  
 1902. *Horn and Bone Implements of the New York Indians*. Bulletin of the New York State Museum, No. 50, pp. 243-350, Albany.
- BELL, R.  
 1897. "History of the Che-che-puy-ew-tis." *Journal of American Folklore*, Vol. 10, pp. 1-8.
- BENNETT, JOHN  
 1944. "Archaeological Horizons in the Southern Illinois Region." *American Antiquity*, vol. 10, pp. 12-22, Menasha.  
 1945. *Archaeological Explorations in Jo Daviess County, Illinois*. University of Chicago Press.
- BIRKET-SMITH, KAJ  
 1918. "A Geographic Study of the Early History of the Algonquian Indians." *Internat. Archiv für Ethnographie*, Vol. 24, pp. 174-222, Leiden.  
 1929. *The Caribou Eskimos, Material and Social Life and Their Cultural Position*. Report of the Fifth Thule Expedition, 1921-24, Vol. 5, 2 parts, Copenhagen.  
 1930a. "Folk Wanderings and Culture Drifts in Northern North America." *Journal de la Société des Américanistes de Paris*, n.s., Vol. 22, pp. 1-32.  
 1930b. *Contributions to Chipewyan Ethnology*. Report of the Fifth Thule Expedition, Vol. 6, No. 3, Copenhagen.  
 1930c. "On the Origin of Eskimo Culture." *Proceedings of the 23rd International Congress of Americanists, 1928*, pp. 470-75.  
 1936. *The Eskimos*. Translated from the Danish by W. E. Calvert, the translation revised by Professor C. Daryll Forde. London.  
 1937a. "Eskimo Cultures and Their Bearing Upon the Prehistoric Cultures of North America and Eurasia." In *International Symposium on Early Man*, (G. G. MacCurdy, editor), pp. 293-302, New York.

- BIRKET-SMITH, KAJ  
 1937b. "The Composite Comb in North America." *Ethnos*, Vol. 2, No. 2, pp. 33-37.
- BIRKET-SMITH, KAJ and FREDERICA DE LAGUNA  
 1938. *The Eyak Indians of the Copper River Delta, Alaska*. Copenhagen.
- BISHOP, CARL WHITING  
 1942. *Origin of the Far Eastern Civilization: A Brief Handbook*. Smithsonian Institution War Background Studies, No. 1, Washington.
- BLACK, GLENN A.  
 1933. *The Archaeology of Greene County*. Indiana History Bulletin, Vol. 10, No. 5, Indianapolis.  
 1934. *Archaeological Survey of Dearborn and Ohio Counties*. Indiana History Bulletin, Vol. 11, No. 7, Indianapolis.  
 1936. *Excavation of the Nowlin Mound*. Indiana History Bulletin, Vol. 13, No. 7, Indianapolis.  
 1941. "Cultural Complexities of Southwestern Indiana." *Proceedings of the Indiana Academy of Science*, Vol. 50, pp. 33-35.  
 1942. "Trait Complexes at the Angel Site." *Proceedings of the Indiana Academy of Science*, Vol. 51, Nos. 34-43, Indianapolis.
- BLACKBIRD, A. J.  
 1891. (History of the Ottawa and Chippewa Indians of Michigan. Ypsilanti, 1887) Deluge Myth Beginning with the Birth of Nanabozho. Quoted by Chamberlin, A. F., *Journal of American Folklore*, Vol. 4, pp. 204-205.
- BLACKWOOD, BEATRICE  
 1927. *A Study of Mental Testing in Relation to Anthropology*. Mental Measurements Monographs, No. 4.
- BLAIR, E. H.  
 1911. *Indian Tribes of the Upper Mississippi and Region of the Great Lakes*. 2 vols. Cleveland.
- BLISS, WESLEY  
 1942. "The Sugar Run Mound Cluster." *The Pennsylvania Archaeologist*, Vol. 12, No. 2, pp. 35-38.
- BLOOMFIELD, LEONARD  
 1928 *Menomini Texts*. American Ethnological Society Publications, Vol. 12.  
 1930. *Sacred Stories of the Sweet Grass Cree*. Canada, Department of Mines, Geological Survey Bulletin 60, Anthropological Series, No. 11, Ottawa.  
 1934. *Plains Cree Texts*. American Ethnological Society Publications, Vol. 16.  
 n.d. *Algonquian Sketch*. (ms.)
- BOAS, FRANZ  
 1891. "Dissemination of Tales Among the Natives of North America." *Journal of American Folklore*, Vol. 4, pp. 13-20.  
 1896. "The Growth of Indian Mythologies." *Journal of American Folklore*, Vol. 9, pp. 1-11.  
 1901. *The Eskimo of Baffin Land and Hudson Bay*. Bulletin of the American Museum of Natural History, Vol. 15, Pt. 1, New York.  
 1907. *Second Report on the Eskimo of Baffin Land and Hudson Bay*. Bulletin of the American Museum of Natural History, Vol. 15, Pt. 2, New York.  
 1909. "Notes on the Iroquois Language." In *Putnam Anniversary Volume*, pp. 427-60, New York.  
 1914. "Mythology and Folk-Tales of North American Indians." *Journal of American Folklore*, Vol. 27, pp. 374-410.  
 1918. *Kutenai Tales*. Bureau of American Ethnology, Bulletin 59, Washington.

## BØE, JOHNS.

1939. Review of Shetelig, H. and H. Falk, "Scandinavian Archaeology." Oxford 1937. *L'Anthropologie*, t. 49, p. 379.

## BONIN, GERHARDT VON and G. M. MORANT

1938. "Indian Races in the United States." *Biometrika*, Vol. 30, pp. 94-129.

## BRADFORD, WILLIAM

1648. *Bradford's History "Of Plimoth Plantation," from the original manuscript*. Boston, 1901.

## BRAUN, E. LUCY

1928. "Glacial and Post-Glacial Plant Migrations Indicated by Relic Colonies of Southern Ohio." *Ecology*, Vol. 9, pp. 284, 302.

1938. "Deciduous Forest Climaxes." *Ecology*, Vol. 19, pp. 515-522.

1940a. "Mixed Deciduous Forests of the Appalachians." Reprinted from *Virginia Journal of Science*, Vol. 1.

1940b. "An Ecological Transect of Black Mountain, Kentucky." *Ecological Monographs*, Vol. 10, pp. 193-241.

## BREUIL, HENRI

1913. "Les Subdivisions du Paléothique supérieur et leur signification." *Congrès International d'Anthropologie et d'Archéologie préhistoriques*, XIVme Session, Genève, 1912.

## BRIGGS, J. E.

1926. "Wisaka." *The Palimpsest*, Vol. 7, pp. 97-112.

## BRINTON, DANIEL G.

1890. "The Hero-God of the Algonkins as a Cheat and a Liar." *Essays of an Americanist*, pp. 130-134.

## BRØGGER, A. W.

1909. "Den Artiske Stenalder i Norge." *Videnskab-selskabets, Skrifter II. Hist.-Filos. Klasse*, No. 1. Oslo.

## BROMLEY, S. W.

1945. "An Indian Relict Area." *The Scientific Monthly*, Vol. 60, pp. 153-154, February.

## BRØNSTED, JOHNS.

1938. *Danmarks Oldtid*. 2 Vols. Copenhagen, 1938-39. Vol. 1, Stenalderen.

## BROWN, CALVIN S.

1926. *Archeology of Mississippi*. Mississippi Geological Survey, University of Mississippi.

## BROWN, CHARLES E.

1940. "Red Paint with Wisconsin Burials." *The Wisconsin Archeologist*, new series, Vol. 21, No. 4, pp. 74-76.

## BROWN, MRS. W. WALLACE

1890. "Wa ba ba nal, or Northern Lights." *Journal of American Folklore*, Vol. 3, pp. 213-214.

## BUNZEL, RUTH

1940. "The Role of Alcoholism in Two Central American Cultures." *Psychiatry*, Vol. 3, pp. 361-387.

## BURKE, R. P.

1933. "Orange-Red Pottery People, a Preliminary Study of an Isolated Culture in Central Alabama." *Arrowpoints*. Vol. 19, Nos. 5 & 6, pp. 33-42. Alabama Anthropological Society, Montgomery.

## BUSHNELL, DAVID I., JR.

1930. *The Five Monacan Towns in Virginia, 1607*. Smithsonian Miscellaneous Collections, Vol. 82, No. 12, Washington.

1933. *Evidence of Indian Occupancy in Albemarle County, Virginia*. Smithsonian Miscellaneous Collections, Vol. 89, No. 7, Washington.
1935. *The Manahoac Tribes in Virginia, 1608*. Smithsonian Miscellaneous Collections, Vol. 94, No. 8, Washington.
1937. *Indian Sites Below the Falls of the Rappahannock, Virginia*. Smithsonian Miscellaneous Collections, Vol. 96, No. 4, Washington.
1940. *Virginia Before Jamestown*. Smithsonian Miscellaneous Collections, Vol. 100, pp. 125-58, Washington.
- BUSK, G.**
1875. Description of Two Beothuc Skulls. *Journal of the Anthropological Institute*, Vol. 5, no. 2, pp. 230-233.
- BUTLER, MARY**
1939. *Three Archaeological Sites in Somerset County, Pennsylvania*. Bulletin of the Pennsylvania Historical Commission, No. 753, Harrisburg.
- BYERS, DOUGLAS S.**
1942. "Fluted Points from Wisconsin." *American Antiquity*, Vol. 7, No. 4, p. 400, Menasha.
- BYERS, DOUGLAS S. and FREDERICK JOHNSON**
1940. *Two Sites on Martha's Vineyard*. Papers of the Robert S. Peabody Foundation for Archaeology, Vol. 1, No. 1, Andover.
- CABRERA, A., y J. YEPES**
1940. *Historia Natural Ediar: Mamíferos Sud-Americanos*. Buenos Aires.
- [CADILLAC PAPERS]**
- 1904-5. Michigan Pioneer and Historical Collections, Vol. 33, 34, Lansing.
- CALDWELL, JOSEPH AND CATHERINE McCANN**
1941. *Irene Mound Site, Chatham County, Georgia*. University of Georgia Press, Athens.
- CAMPBELL, STANLEY**
1916. "Two Cheyenne Stories." *Journal of American Folklore*, Vol. 29, pp. 406-408.
- CARSON, WILLIAM**
1917. "Ojibwa Tales." *Journal of American Folklore*, Vol. 30, pp. 491-493.
- CARTER, GEORGE F.**
1945. *Plant Geography and Culture History in the American Southwest*. Viking Fund Publications in Anthropology, No. 5, New York.
- CHAMBERLAIN, A. F.**
1888. "Notes on the History, Customs, and Beliefs of the Mississagua Indians." *Journal of American Folklore*, Vol. 1, pp. 150-160.
1889. "Tales of the Mississaguas." *Journal of American Folklore*, Vol. 2, pp. 141-147.
1890. "Tales of the Mississaguas, II." *Journal of American Folklore*, Vol. 3, pp. 149-154.
1891. "Nanibozhu Amongst the Otipiwe, Mississagas, and other Algonkian Tribes." *Journal of American Folklore*, Vol. 4, pp. 193-213.
1892. "A Mississaga Legend of Naniboju." *Journal of American Folklore*, Vol. 5, pp. 291-292.
- CHAMPE, JOHN L.**
1936. "The Sweetwater Culture Complex." In *Chapters in Nebraska Archaeology*, Vol. 1, No. 3, pp. 249-301, University of Nebraska.
- CHILDE, V. GORDON**
1931. "The Forest Cultures of Northern Europe: A Study in Evolution and Diffusion." *Journal of the Royal Anthropological Institute*, Vol. 61, pp. 325-348.

1937. "Adaptation to the Postglacial Forest on the North Eurasian Plain." In *International Symposium on Early Man*, (G. G. MacCurdy, editor), pp. 233-242.
1939. *The Dawn of European Civilization*. 2nd edition, London.
- CHITTENDEN, HIRAM M. and ALFRED T. RICHARDSON, editors
1905. *Life, Letters and Travels of Father Pierre-Jean de Smet, S.J., 1801-1873*. New York.
- CLAFLIN, WILLIAM H., JR.
1931. *The Stalling's Island Mound, Columbia County, Georgia*. Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. 14, No. 1, Cambridge.
- CLARK, J. G. D.
1936. *The Mesolithic Settlement of Northern Europe. A Study of the Food-gathering Peoples of Northern Europe During the Early Post-Glacial Period*. Cambridge.
1937. "Scandinavian Rock-engravings." *Antiquity*, Vol. 11, pp. 56-69.
1938. "The Reindeer Hunting Tribes of Northern Europe." *Antiquity*, Vol. 12, pp. 154-171.
1940. "New World Origins." *Antiquity*, Vol. 14, pp. 117-137.
- COAN, T.
1880. *Adventures in Patagonia*. New York.
- COATS, W.
1852. *The Geography of Hudson's Bay*. Edited by J. Barrow, Hakluyt Society, No. 11, London.
- COLE, FAY-COOPER
1943. "Chronology in the Middle West." In *Recent Advances in American Archaeology, Proceedings of the American Philosophical Society*, Vol. 86, No. 2, pp. 299-303.
- COLE, FAY-COOPER and THORNE DEUEL
1937. *Rediscovering Illinois: Archaeological Explorations in and Around Fulton County*. The University of Chicago Press.
- COLLINS, HENRY B., JR.
1926. "Archeological and Anthropometrical Work in Mississippi." *Explorations and Field Work of the Smithsonian Institution, Smithsonian Miscellaneous Collections*, Vol. 78, No. 1, pp. 91-92, Washington.
1927. "Archaeological Work in Louisiana and Mississippi." *Explorations and Field Work of the Smithsonian Institution in 1926, Smithsonian Miscellaneous Collections*, Vol. 78, No. 7, pp. 200-207, Washington.
1932. *Excavations at a Prehistoric Indian Village Site in Mississippi*. Proceedings of the U.S. National Museum, Vol. 79, Art. 32, Washington.
1937. *Archeology of St. Lawrence Island, Alaska*. Smithsonian Miscellaneous Collections, Vol. 96, No. 1, Washington.
1940. *Outline of Eskimo Prehistory*. Smithsonian Miscellaneous Collections, Vol. 100, pp. 533-592, Washington.
- 1941a. "Relationships of an Early Indian Cranial Series from Louisiana." *Journal of the Washington Academy of Sciences*, Vol. 31, No. 4, pp. 145-155.
- 1941b. "Prehistoric Eskimo Harpoon Heads from Bering Strait." *Journal of the Washington Academy of Science*, Vol. 31, No. 7.
- COOPER, J. M.
1917. *Analytical and Critical Bibliography of the Tribes of Tierra del Fuego*. Bureau of American Ethnology Bulletin 63, Washington.
1928. "Northern Algonkian Scrying and Scapulimancy." In *P.W. Schmidt Festschrift*, edited by W. Koppers, pp. 205-217, Wien.
1938. *Snares, Deadfalls and Other Traps of the Northern Algonquians and Northern Athapascans*. Catholic University of America, Anthropological Series 5, Washington.

1939. "Is the Algonquian Family Hunting Ground System Pre-Columbian?" *American Anthropologist*, Vol. 41, pp. 66-90.
1941. *Temporal Sequence and the Marginal Cultures*. Catholic University of America, Anthropological Series 10, Washington.
- 1942a. "Areal and Temporal Aspects of Aboriginal South American Culture." *Primitive Man*, Vol. 15, pp. 1-38.
- 1942b. "The South American Marginal Cultures." *Proceedings 8th American Scientific Congress*, Vol. 2, pp. 147-160, Washington.
- COTTER, JOHN L.**
1937. "The Significance of Folsom and Yuma Artifact Occurrences in the Light of Typology and Distribution." *Philadelphia Anthropological Society, 25th Anniversary Studies*, Vol. 1, pp. 27-35.
- COTTRELL, LEONARD S., JR.**
1941. *Developments in Social Psychology, 1939-1940*. Sociometry Monographs, No. 2, p. 49.
- CRESSWELL, J. R.**
1923. "Folk-Tales of the Swampy Cree of Northern Manitoba." *Journal of American Folklore*, Vol. 36, pp. 404-406.
- CROSS, DOROTHY**
1941. *Archaeology of New Jersey*, Vol. 1. Trenton, New Jersey.
- CUNNINGHAM, WILBUR M.**
- n.d. The Glacial Kame Culture. Manuscript.
- DALY, REGINALD A.**
1934. *The Changing World of the Ice Age*. New Haven.
- DANSEREAU, PIERRE**
1944. "Interpenetrating Climaxes in Quebec." *Science*, Vol. 99, No. 2578, May 26, pp. 426-427.
- DAVIDSON, D. S.**
- 1928a. "Folk Tales from Grand Lake Victoria, Quebec." *Journal of American Folklore*, Vol. 41, pp. 275-292.
- 1928b. "Some Tete-de-Boule Tales." *Journal of American Folklore*. Vol. 41, pp. 262-274.
1937. *Snowshoes*. Memoirs of the American Philosophical Society, Vol. 6, Philadelphia.
- DAVIS, E. MOTT**
1940. *The Archaeology of Northeastern Asia*. Papers of the Excavators' Club, Vol. 1, No. 1, Cambridge.
- DEEVEY, EDWARD S., JR.**
1939. "Studies in Connecticut Lake Sediments." *American Journal of Science*, Vol. 237, pp. 691-724.
1943. "Additional Pollen Analyses from Southern New England." *American Journal of Science*, Vol. 241, pp. 717-752.
1944. "Pollen Analysis and History." *American Scientist*, Vol. 32, pp. 39-53.
- DEJARNETTE, DAVID L. AND STEVE B. WIMBERLY**
1941. *The Bessemer Site; Excavation of Three Mounds and Surrounding Village Areas Near Bessemer, Alabama*. Geological Survey of Alabama, Museum Paper 17, University, Alabama.
- DELLINGER, S. C. AND S. D. DICKINSON**
1942. "Pottery from the Ozark Bluff Shelters." *American Antiquity*, Vol. 7, pp. 276-290, Menasha.
- DEMING, MRS. E. W.**
1902. "Abenaki Witchcraft Story." *Journal of American Folklore*, Vol. 15, pp. 62-63.

## DICKINSON, S. D.

1936. "The Ceramic Relationships of the Pre-Caddo Pottery from the Crenshaw Site." *Bulletin of the Texas Archeological and Paleontological Society*, Vol. 8, pp. 56-68.

## DICKINSON, S. D. and S. C. DELLINGER

1940. "A Survey of the Historic Earthenware of the Lower Arkansas Valley." *Bulletin of the Texas Archaeological and Paleontological Society*, Vol. 12, pp. 76-98.

## DICKINSON, S. D. and H. J. LEMLEY

1939. "Evidences of the Marksville and Coles Creek Complexes at the Kirkham Place, Clark County, Arkansas." *Bulletin of the Texas Archeological and Paleontological Society*, Vol. 11, pp. 139-189.

## DIXON, ROLAND B.

1909. "The Mythology of the Central and Eastern Algonkins." *Journal of American Folklore*, Vol. 22, pp. 1-9.

1914. "The Early Migration of the Indians of New England and the Maritime Provinces." *Proceedings of the American Antiquarian Society*, new series, 24, pp. 65-76.

1923. *The Racial History of Man*. New York.

## DOBBS, A.

1744. *An Account of the Countries Adjoining to Hudson's Bay, in the North-west part of America*. London.

## DORSEY, G. A. and A. L. KROEBER.

1903. *Traditions of the Arapaho*. Field Columbian Museum, Publication 81, Anthropological Series, Vol. 5.

## DUCATEL, TIMOLEAN

1846. "A Fortnight Among the Chippewa." *U.S. Catholic Magazine*, vol. 5.

## ECKSTORM, (MRS.) FANNIE H.

1924. "Katahdin Legends." *Appalachia*, December.

## ELLIS, H.

1748. *A Voyage to Hudson's-Bay*. London.

## EMERSON, BENJAMIN KENDALL

1895. *A Mineralogical Lexicon of Franklin, Hampshire and Hampden Counties, Massachusetts*. United States Geological Survey, Bulletin 125, Washington.

## ESCHWEGE, W. L. von

1818. *Journal von Brasilien*. 2 vols. Weimar.

## ESPASA, HIJOS DE J., editores

n.d. *Enciclopedia Universal Ilustrada*. t. 16, Barcelona.

## EUROPAEUS, AARNE

1929. "Suomusjärvi-Kultur." *Reallexikon der Vorgeschichte* (Max Ebert, editor), Vol. 13, p. 142, Berlin.

1930. "Die Relative Chronologie der Steinzeitlichen Keramik in Finnland." *Acta Archaeologica*, Vol. 1, pp. 165-190 and 205-220.

## FAIRBANKS, CHARLES H.

1942. "The Taxonomic Position of Stalling's Island, Georgia." *American Antiquity*, Vol. 7, pp. 223-231, Menasha.

## FARQUHARSON, R. J.

1876. "Recent Archaeological Discoveries at Davenport, Iowa of Copper Axes, Cloth, etc., Supposed to Have Come Down to us from a Pre-historic People, Called the Mound-Builders." *Proceedings of the Davenport Academy of Science*, Vol. 1, pp. 117-143.

FAUSET, ARTHUR H.

1925. "Folklore from the Half-Breeds in Nova Scotia." *Journal of American Folklore*, Vol. 38, pp. 300-315.

FENTON, WILLIAM N.

1940. "Problems Arising from the Historic Northeastern Position of the Iroquois." In *Essays in Historical Anthropology, Smithsonian Miscellaneous Collections*, Vol. 100, pp. 159-251, Washington.

1941. "Iroquois Suicide: A Study in the Stability of a Culture Pattern." *Anthropological Papers*, No. 14, *Bureau of American Ethnology Bulletin* 128, pp. 80-137, Washington.

FERGUSSON, NEIL C.

1915. "Notes on Timagami Folklore." *Canada Geological Survey Memoir* 71, pp. 83-85.

FERGUSSON, HENRY L.

1935. *Archaeological Exploration of Fisher's Island, New York. Indian Notes and Monographs*, Vol. 11, No. 1, New York.

FEWKES, J. H.

1890. "A Contribution to Passamaquoddy Folklore." *Journal of American Folklore*, Vol. 3, pp. 257-280.

FEWKES, JESSE WALTER

1924. "Preliminary Archaeological Explorations at Weeden Island, Florida." *Smithsonian Miscellaneous Collections*, Vol. 76, No. 13, pp. 1-26, Washington.

FEWKES, VLADIMIR J.

1937. "Aboriginal Potsherds from Red River, Manitoba." *American Antiquity*, Vol. 3, pp. 143-156, Menasha.

FIELD, HENRY and EUGENE PROSTOV

1938. "Archaeology in the U.S.S.R." *American Anthropologist*, Vol. 40, pp. 653-679.

1940. "Archaeological Researches in the U.S.S.R., 1938-1939." *American Anthropologist*, Vol. 42, pp. 211-235.

FINCH, VERNOR C. and GLENN T. TREWARTHA

1936. *Elements of Geography*. New York and London.

FINKELSTEIN, J. JOE

1940. "The Norman Site Excavations Near Wagoner, Oklahoma." *The Oklahoma Prehistorian*, Vol. 3, No. 3, pp. 2-15.

FINN, D. J.

1932-6. *Archaeological Finds on Lamma Island*. Parts II to XIII. The Hongkong Naturalist, Vol. 3-7.

FLANNERY, REGINA

1936. "Some Aspects of James Bay Recreative Culture." *Primitive Man*, Vol. 9, pp. 49-56.

1939a. *An Analysis of Coastal Algonquian Culture*. The Catholic University of America Anthropological Series, No. 7, Washington.

1939b. "The Shaking-Tent Rite Among the Montagnais of James Bay." *Primitive Man*, Vol. 12, pp. 11-16.

FORBUSH, EDWARD HOWE

1925-1929 *Birds of Massachusetts and the Other New England States*. 3 vols. Boston.

FORD, J. A.

1935. *Ceramic Decoration Sequence at an Old Indian Village Site near Sicily Island, Louisiana*. Anthropological Study No. 1, Louisiana Department of Conservation, New Orleans.

1936. *Analysis of Indian Village Site Collections from Louisiana and Mississippi*. Anthropological Study No. 2, Louisiana Department of Conservation, New Orleans.

- FORD, J. A. and GEORGE I. QUIMBY, JR.
1945. *The Tchefuncte Culture, an Early Occupation of the Lower Mississippi Valley*. Society for American Archaeology Memoir No. 2, Menasha.
- FORD, J. A. and GORDON WILLEY
1939. *News Letter*. Southeastern Archaeological Conference, Vol. 1, No. 3, April. Mimeo-graphed.
1940. *Crooks Site, A Marksville Period Burial Mound in La Salle Parish, Louisiana*. Anthropological Study No. 3, Louisiana Geological Survey, New Orleans.
1941. "An Interpretation of the Prehistory of the Eastern United States." *American Anthropologist*, Vol. 43, pp. 325-363.
- FORDE, C. DARYLL
1934. *Habitat, Economy and Society: A Geographical Introduction to Ethnology*. London.
- FOWKE, GERARD
1894. *Archeologic Investigations in James and Potomac Valleys*. Bureau of American Ethnology Bulletin 23, Washington.
- FUNKHOUSER, WILLIAM D. and WILLIAM S. WEBB
1937. "The Chilton Site in Henry County, Kentucky." *University of Kentucky Reports in Archaeology and Anthropology*, Vol. 3, No. 5, pp. 174-206.
- GAHS, A.
1928. "Kopf-, Schädel- und Langknockenopfer bei Rentiervolkern." In *P. W. Schmidt Festschrift*, edited by W. Koppers, pp. 231-268, Wein.
- GALLAND, ISAAC
1869. *Indian Tribes of the West*. Annals of Iowa, Vol. 7.
- GARTH, T. R.
1931. *Race Psychology: A Study of Racial Mental Differences*. New York.
- GASS, J.
1877. "Report of Exploration of Mound No. 10, Cook's Farm Group." *Proceedings of the Davenport Academy of Science*, Vol. 2, pp. 141-142.
- GILFILLAN, JOSEPH A.
1901. *The Ojibways in Minnesota*. Minnesota Historical Society Collections, Vol. 9.
- GEREND, ALPHONSE
1904. "Potsherds from Lake Michigan Shore Sites in Wisconsin." *Wisconsin Archaeologist*, Vol. 4, pp. 3-19.
- GLADWIN, HAROLD S.
1937. "Independent Invention Versus Diffusion." *American Antiquity*, Vol. 3, pp. 156-160, Menasha.
- GOOKIN, DANIEL
1792. *Historical Collections of the Indians of New England*. Collections of the Massachusetts Historical Society for the year 1792, Vol. I. Reprinted by T. R. Marvin, 1859.
- GORDON, CHARLES H. M.
1925. "How Chekapash Snared the Sun." *The Beaver*, September.
- GORDON, GEORGE BYRON
1906. "Notes on the Western Eskimo." *Transactions of the Department of Archaeology, Free Museum of Science and Art, University of Pennsylvania*, Vol. 2, Part 6, pp. 69-101.
- GORDON, ROBERT B. >
1940. *The Primeval Forest Types of Southeastern New York*. New York State Museum Bulletin No. 321, Albany.

## GREENMAN, EMERSON F.

1932. "Excavation of the Coon Mound and An Analysis of the Adena Culture." *Ohio Archaeological and Historical Quarterly*, Vol. 41, No. 3, pp. 369-410.
1937. *The Younge Site*. Occasional Contributions from the Museum of Anthropology University of Michigan, No. 6, Ann Arbor.
1938. "Hopewellian Traits in Florida." *American Antiquity*, Vol. 3, pp. 327-332, Menasha.
1941. "Sites on Abandoned Beaches of Lake Huron, Ontario." *Society for American Archaeology Notebook*, Vol. 2, No. 2, pp. 26-27. Mimeographed.
1943. "An Early Industry on a Raised Beach Near Killarney, Ontario." *American Antiquity*, Vol. 8, pp. 260-265, Menasha.

## GREENMAN, EMERSON F. and GEORGE M. STANLEY

1940. "A Geologically Dated Camp Site, Georgian Bay, Ontario." *American Antiquity*, Vol. 5, pp. 194-199, Menasha.
1941. "Two Post-Nipissing Sites Near Killarney, Ontario." *American Antiquity*, Vol. 6, pp. 305-313, Menasha.
1943. "The Archaeology and Geology of Two Early Sites Near Killarney, Ontario." *Papers of the Michigan Academy of Science, Arts, and Letters*, Vol. 28, pp. 505-530.

## GRIFFIN, JAMES B.

1935. *An Analysis of the Fort Ancient Culture*. Notes from the Ceramic Repository for the Eastern United States, Museum of Anthropology, University of Michigan, No. 1, Ann Arbor.
- 1937a. "The Archaeological Remains of the Chiwere Sioux." *American Antiquity*, Vol. 2, pp. 180-181, Menasha.
- 1937b. "The Chronological Position and Ethnological Relationships of the Fort Ancient Aspect." *American Antiquity*, Vol. 2, pp. 273-276, Menasha.
1938. "The Ceramic Remains from Norris Basin, Tennessee." In *An Archaeological Survey of the Norris Basin in Eastern Tennessee* by W. S. Webb, Bureau of American Ethnology, Bulletin 118, pp. 253-359, Washington.
1939. "Report on the Ceramics of Wheeler Basin." In *An Archaeological Survey of Wheeler Basin on the Tennessee River in Northern Alabama* by William S. Webb, Bureau of American Ethnology, Bulletin 122, pp. 127-165, Washington.
- 1941a. "Additional Hopewell Material from Illinois." *Indiana Historical Society Prehistory Research Series*, Vol. 2, No. 3, pp. 165-223.
- 1941b. "Report on Pottery from the St. Louis Area." *The Missouri Archaeologist*, Vol. 7, pp. 1-17, Columbia, Missouri.
1942. "Adena Pottery." *American Antiquity*, Vol. 7, pp. 344-358, Menasha.
- 1943a. *The Fort Ancient Aspect, Its Cultural and Chronological Position in Mississippi Valley Archaeology*. University of Michigan Press.
- 1943b. "An Analysis and Interpretation of the Ceramic Remains from Two Sites Near Beaufort, South Carolina." *Anthropological Paper No. 22, Bureau of American Ethnology Bulletin 133*, pp. 155-168, Washington.
- 1944a. "The De Luna Expedition and the 'Buzzard Cult' in the Southeast." *Journal of the Washington Academy of Science*, Vol. 34, No. 9, pp. 299-303.
- 1944b. "The Iroquois in American Prehistory." *Papers of the Michigan Academy of Science, Arts, and Letters*, Vol. 29, pp. 357-374.
- 1945a. "The Significance of the Fiber Tempered Pottery of the St. Johns." *Journal of the Washington Academy of Science*, Vol. 35.

- 1945b. "Ceramic Collections from Two South Carolina Sites." *Papers of the Michigan Academy of Science, Arts, and Letters*, Vol. 30, pp. 465-478.
- 1945c. "The Box Elder Mound, La Salle County, Illinois." *American Antiquity*, Vol. 11, pp. 47-48, Menasha.
- 1945d. "An Interpretation of Siouan Archaeology in the Piedmont of North Carolina and Virginia." *American Antiquity*, Vol. 10, pp. 321-331, Menasha.
- GRINNELL, GEORGE B.**
1892. *Blackfoot Lodge Tales*. New York.
1893. "A Blackfoot Sun and Moon Myth." *Journal of American Folklore*, Vol. 6, pp. 44-47.
1903. "A Cheyenne Obstacle Myth." *Journal of American Folklore*, Vol. 16, pp. 108-115.
1907. "Some Early Cheyenne Tales, I." *Journal of American Folklore*, Vol. 20, pp. 169-194.
1908. "Some Early Cheyenne Tales, II." *Journal of American Folklore*, Vol. 21, pp. 269-320.
1913. *Blackfoot Indian Stories*. New York.
1921. "Falling-Star." *Journal of American Folklore*, Vol. 34, pp. 308-315.
1923. *The Cheyenne Indians*. 2 vols. New Haven.
1926. *By Cheyenne Campfires*. Yale University Press.
- GUERNSEY, ELAM Y.**
1939. "Relationships Among Various Clark County Sites." *Proceedings of the Indiana Academy of Science*, Vol. 48, pp. 27-32, Indianapolis.
- GUSINDE, M.**
1931. *Die Feuerland-Indianer*, Band I. Die Selk'nam, Mödling bei Wien.
- HAAG, WILLIAM G.**
1941. "The Pottery from the Morgan Stone Mound." In "The Morgan Stone Mound" by W. S. Webb, *University of Kentucky Reports in Anthropology and Archaeology*, Vol. 5, No. 3, pp. 263-267, Lexington.
- 1942a. "Early Horizons in the Southeast." *American Antiquity*, Vol. 7, pp. 209-222, Menasha.
- 1942b. "A Description and Analysis of the Pickwick Pottery." In *An Archaeological Survey of Pickwick Basin* by W. S. Webb and D. L. De Jarnette, Bureau of American Ethnology, Bulletin 129, pp. 513-526, Washington.
- HADLOCK, WENDELL S.**
1939. *The Taft's Point Shell Mound at West Gouldsboro, Maine*. Bulletin of the Robert Abbe Museum, Bar Harbor, No. 5.
- 1941a. "Observations Concerning the 'Red Paint Culture'." *American Antiquity*, Vol. 7, pp. 151-161, Menasha.
- 1941b. *Three Shell Heaps on Frenchman's Bay*. Bulletin of the Robert Abbe Museum, Bar Harbor, No. 6.
- HAGAR, STANSBURY**
1895. "Micmac Customs and Traditions." *American Anthropologist*, Vol. 8, pp. 31-42.
1896. "Micmac Magic and Medicine." *Journal of American Folklore*, Vol. 9, pp. 170-177.
1900. "The Celestial Bear." *Journal of American Folklore*, Vol. 49, pp. 92-103.
- HALLIDAY, W. E. D.**
1937. *A Forest Classification for Canada*. Canada, Department of Mines and Resources; Lands, Parks, and Forests Branch, Forest Service Bulletin 89, Ottawa.
- HALLOWELL, A. IRVING**
- n.d. "Saulteaux Mythology." manuscript.
1926. "Bear Ceremonialism in the Northern Hemisphere." *American Anthropologist*, Vol. 28, pp. 1-175.

1929. "The Physical Characteristics of the Indians of Labrador." *Journal, Société des Americanistes de Paris*, Vol. 21, pp. 337-371.
1936. "The Passing of the Midewiwin in the Lake Winnipeg Region." *American Anthropologist*, Vol. 38, pp. 32-51.
1939. "Sin, Sex and Sickness in Saulteaux Belief." *British Journal of Medical Psychology*, Vol. 18, pp. 191-199.
1940. "Aggression in Saulteaux Society." *Psychiatry*, Vol. 13, pp. 404-405.
- 1941b. "The Social Function of Anxiety in a Primitive Society." *American Sociological Review*, Vol. 6, pp. 869-881.
- 1941a. "The Rorschach Method as an Aid in the Study of Personalities in Primitive Societies." *Character and Personality*, Vol. 9, pp. 235-245.
- 1942a. "Acculturation Processes and Personality Changes as Indicated by the Rorschach Technique." *Rorschach Research Exchange*, Vol. 6, pp. 42-50.
- 1942b. *The Role of Conjuring in Saulteaux Society*. Philadelphia Anthropological Society Publications, Vol. 2, Philadelphia.
1945. "The Rorschach Technique in the Study of Personality and Culture." *American Anthropologist*, Vol. 47, pp. 95-210.
- HAMILTON, J. C.**
1894. "Two Algonquin Legends." *Journal of American Folk-lore*, Vol. 7, pp. 201-204.
- HARRINGTON, JOHN P.**
1940. *Southern Peripheral Athapaskan Origins, Divisions, and Migrations*. Smithsonian Miscellaneous Collections, Vol. 100, pp. 503-532, Washington.
- HARRINGTON, M. R.**
1901. "An Abenaki 'Witch Story'." *Journal of American Folklore*, Vol. 14, pp. 160.
1920. *Certain Caddo Sites in Arkansas*. Indian Notes and Monographs, No. 10, New York.
1922. *Cherokee and Earlier Remains on Upper Tennessee River*. Indian Notes and Monographs, No. 24, New York.
1924. "The Ozark Bluff-Dwellers." *American Anthropologist*, Vol. 26, No. 1, pp. 1-21.
1933. *Gypsum Cave, Nevada*. Southwest Museum Papers, No. 8, Los Angeles.
- HASEBE, KOTONDO**
1926. "Harpoon-heads of Antler Found from the Shell-mounds of Motowanishi, Hokkaido." *Journal of the Anthropological Society of Tokyo*, Vol. 41. [In Japanese]
- HATT, GUDMUND**
1914. *Arktiske Skinddragter i Eurasien og Amerika*. København.
- 1916a. "Kyst-og Indlandskultur i det Arktiske." *Geografisk tidskrift*, Vol. 23, pp. 284-290.
- 1916b. *Moccasins and Their Relation to Arctic Footwear*. American Anthropological Association, Memoir, Vol. 3, No. 3, pp. 151-250.
1934. "North American and Eurasian Culture Connections." *Proceedings of the 5th Pacific Scientific Congress, Canada, 1933*, Vol. 4, pp. 2755-2765, University of Toronto Press.
- HAURY, EMIL W.**
1943. "A Possible Cochise-Mogollon-Hohokam Sequence." In "Recent Advances in American Archaeology," *Proceedings of the American Philosophical Society*, Vol. 86, No. 2, pp. 260-264.
- HAVILAND, M. D.**
1926. *Forest, Steppe, and Tundra*. Cambridge.
- HEAPE, W.**
1931. *Emigration, Migration and Nomadism*. Edited by F. H. A. Marshall. Cambridge.
- HENNEPIN, LOUIS**
1698. *A New Discovery of a Vast Country in America*. London.

## HENRY, J.

1941. *Jungle People: A Kaingang Tribe of the Highlands of Brazil*, New York.

## HERTZBERG, HANS THEODORE EDWARD

1940. "Skeletal Material from the Wright Site, Montgomery County." In "The Wright Mounds" by W. S. Webb, *University of Kentucky Reports in Anthropology and Archaeology*, Vol. 5, No. 1, pp. 83-102.

## HESSE, RICHARD, W. C. ALLEE and KARL P. SCHMIDT

1937. *Ecological Animal Geography*. New York.

## HEWES, GORDON W.

1942. "The Ainu Double Foreshaft Toggle Harpoon and Western North America." *Journal of the Washington Academy of Sciences*, Vol. 32, No. 4, pp. 93-104.

## HEWITT, J. N. B.

1926. "Ethnological Researches Among the Iroquois and Chippewa." *Smithsonian Miscellaneous Collections*, Vol. 78, pp. 114-117, Washington.

1910. "Nanabozho." In *Handbook of American Indians North of Mexico*, Bureau of American Ethnology, Bulletin 30, Pt. II, pp. 19-23, Washington.

## HEYE, GEORGE G., FREDERICK W. HODGE, and GEORGE H. PEPPER

1918. *The Nacoochee Mound in Georgia*. Contributions from the Museum of the American Indian, Heye Foundation, Vol. 4, No. 3, New York.

## HIBBEN, FRANK C.

1941. *Evidences of Early Occupation in Sandia Cave, New Mexico, and Other Sites in the Sandia-Manzano Region*. Smithsonian Miscellaneous Collections, Vol. 99, No. 23, Washington.

## HIGGESON

1629. *New England's Plantation. Or, a Short and True Description of the Commodities and Discommodities of that Countrey. Written in the year 1629, by Mr. Higgeson, a Reverend Divine Now there Resident. Whereunto is Added a Letter Sent by Mr. Graves, an Engineer, Out of New England. Reprinted from the Third edition, London, 1630, Massachusetts Historical Society*, Vol. 1, Reprinted by T. R. Marvin, 1859. [Author's name also written, Francis Higginson]

## HILL, ASA T. and MARVIN KIVETT

1940. "Woodland-like Manifestations in Nebraska." *Nebraska History*, Vol. 21, No. 3, pp. 143-243.

## HILL, ASA T. and GEORGE METCALF

1941. "A Site of the Dismal River Aspect in Chase County, Nebraska." *Nebraska History*, Vol. 22, No. 2, pp. 155-215.

## HINSDALE, WILBERT B.

1927. "Indian Corn Culture in Michigan." *Papers of the Michigan Academy of Science, Arts, and Letters*, Vol. 8, pp. 31-49.

## HITCHCOCK, ROMYN

1891a. "The Ancient Pit-Dwellers of Yezo." *U. S. National Museum Report for 1890*, pp. 417-427, Washington.

1891b. "The Ainos of Yezo, Japan." *U. S. National Museum Report for 1890*, pp. 429-502, Washington.

## HODGE, FREDERICK WEBB, Editor

1907-10. Handbook of American Indians North of Mexico. *Bureau of American Ethnology, Bulletin 30*, Pts. 1 and 2, Washington.

- HOFFMAN, WALTER J.
- 1890. "Mythology of the Menomini Indians." *American Anthropologist*, Vol. 3, pp. 243-258.
  - 1891. "The Midewiwin; or 'Grand Medicine Society' of the Ojibwa." *7th Annual Report, Bureau of American Ethnology, 1885-1886*, pp. 143-300.
  - 1896. "The Menomini Indians." *14th Annual Report, Bureau of American Ethnology, 1892-1893*, Pt. I, pp. 3-328, Washington.
- HOLMES, WILLIAM H.
- 1885. "Evidences of the Antiquity of Man on the Site of the City of Mexico." *Transactions of the Anthropological Society of Washington*, Vol. 3, pp. 68-81, Washington.
  - 1894. "Earthenware of Florida: Collection of C. B. Moore." *Academy of Natural Sciences, Philadelphia Journal*, Vol. 10, Pt. I, pp. 105-129.
  - 1903. "Aboriginal Pottery of the Eastern United States." *20th Annual Report, Bureau of American Ethnology 1898-1899*, pp. 1-237. Washington.
  - 1919. "Handbook of Aboriginal American Antiquities. Part I. Introductory: The Lithic Industries." *Bureau of American Ethnology, Bulletin 60*, Washington.
- HOLTVED, ERIK
- 1938. *Foreløbig Beretning om den arkeologisk-ethnografiske expedition til Thule Distritet, 1935-1937*. Geografiske Tidskrift, Bd. 4, Hlvbd 1, Copenhagen.
- HOOTON, EARNEST A. and CHARLES C. WILLOUGHBY
- 1920. *Indian Village Site and Cemetery near Madisonville, Ohio*. Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. 8, No. 1, Cambridge.
- HORDEN, J.
- 1881. *A Grammar of the Cree Language*. London.
- HORTON, DONALD
- 1943. "The Function of Alcohol in Primitive Societies: A Cross-Cultural Study." *Quarterly Journal of Studies on Alcohol*, Vol. 4, pp. 199-320.
- HOUCK, LOUIS
- 1909. *The Spanish Regime in Missouri*. Chicago.
- HOUGH, A. F.
- 1942. "Soils in a Virgin Hemlock-Birch Forest on the Northern Allegheny Plateau." *Soil Science*, Vol. 54, pp. 335-341.
  - 1943. "Soil Factors and Stand History in a Virgin Forest Valley of the Northern Allegheny Plateau." *Soil Science*, Vol. 56, pp. 19-28.
- HOUGH, A. F. and R. D. FORBES
- 1943. "The Ecology and Silvics of Forests in the High Plateaus of Pennsylvania." *Ecological Monographs*, Vol. 13, pp. 299-320.
- HOWARD, EDGAR B.
- 1935. "Evidence of Early Man in North America." *Museum Journal*, Vol. 24, Nos. 2-3, pp. 61-176, University Museum, University of Pennsylvania.
- HOWARD, EDGAR B., LINTON SATTERTHWAITE, JR., and CHARLES BACHE
- 1941. "Preliminary Report on a Buried Yuma Site in Wyoming." *American Antiquity*, Vol. 7, pp. 70-74, Menasha.
- HOWARD, LYNN E.
- 1940. "Preliminary Report on Cherokee County Archaeology." *Society for American Archaeology Notebook*, April, pp. 107-108, mimeographed.
- HOWLEY, JAMES P.
- 1915. *The Beothucks or Red Indians, the Aboriginal Inhabitants of Newfoundland*. Cambridge.

## HRDLIČKA, ALEŠ

1916. Physical Anthropology of the Lenape or Delawares and of the Eastern Indians in General. *Bureau of American Ethnology, Bulletin 62*, Washington.
1927. Catalogue of Human Crania in the United States National Museum Collections. (The Algonkin and Related Iroquois; Siouan, Caddoan, Salish and Sahaptin, Shoshonean, and California Indians.) *Proceedings of the U. S. National Museum*, Vol. 69, Art. 5, Washington.

## HUNT, G. T.

1940. *The Wars of the Iroquois*. Madison, Wisconsin.

## HUBBARD, WILLIAM

1815. *A General History of New England from the Discovery to MDCLXXX*. Published by the Massachusetts Historical Society, Cambridge.

## Indianapolis Archaeological Conference.

1935. National Research Council, Division of Anthropology and Psychology, Committee on State Archaeological Surveys.

## JACK, EDWARD

- 1891-92. "The Abenakis of St. John's River." *Transactions Canadian Institute*, Vol. 3, pp. 195-205.

1895. "Maliseet Legends." *Journal of American Folklore*, Vol. 8, pp. 193-208.

## JAMIESON, E. and P. SANDIFORD

1928. "The Mental Capacity of the Southern Ontario Indians." *Journal of Educational Psychology*, Vol. 19, pp. 536-551.

## JENKS, A. E.

1932. "The Problem of the Culture from the Arvilla Gravel Pit." *American Anthropologist*, Vol. 34, pp. 455-467.

1937. *Minnesota's Browns Valley Man and Associated Burial Objects*. American Anthropological Association, Memoir No. 49.

## JENNESS, DIAMOND

1925. "A New Eskimo Culture in Hudson Bay." *The Geographical Review*, Vol. 15, No. 3, pp. 428-437.

1929. "Notes on the Beothuk Indians of Newfoundland." *Annual Report of the National Museum of Canada for 1927, Bulletin No. 56*.

1933. "The Problem of the Eskimo." In *The American Aborigines*, pp. 373-396, Toronto.

1935. *The Ojibwa Indians of Parry Island, Their Social and Religious Life*. Canada Department of Mines, Bulletin 78, Anthropological Series, No. 17, Ottawa.

1937. *The Indian Background of Canadian History*. National Museum of Canada Bulletin 86, Anthropological Series 21, Ottawa.

1940. "Prehistoric Culture Waves from Asia to America." *Journal of the Washington Academy of Sciences*, Vol. 30, pp. 1-15.

1941. *An Archaeological Collection from the Belcher Islands in Hudson Bay*. Annals of the Carnegie Museum, Vol. 28.

## JENNINGS, JESSE D.

1941. "Chickasaw and Earlier Indian Cultures of Northeast Mississippi." *The Journal of Mississippi History*, Vol. 3, No. 3, pp. 155-226.

## JOCHELSON, WALDEMAR

1925. *Archaeological Investigations in the Aleutian Islands*. Carnegie Institution Publication No. 367, Washington.

1928. *Archaeological Investigations in Kamchatka*. Carnegie Institution Publication 388, Washington.

## JOHNSON, FREDERICK

1937. "Problems Surrounding the Classification of Certain Culture Complexes in New England." *American Antiquity*, Vol. 3, pp. 161-165, Menasha.  
 1942. *The Boylston Street Fishweir*. Papers of the Robert S. Peabody Foundation for Archaeology, Vol. 2, Andover.

## JONES, PETER

1861. *History of the Ojibway Indians; with especial reference to their conversion to Christianity*. London.

## JONES, VOLNEY H.

1936. "The Vegetal Remains of Newt Kash Hollow Shelter." In *Rock Shelters in Menifee County, Kentucky* by Webb, W. S. and W. D. Funkhouser, *University of Kentucky Reports in Archaeology and Anthropology*, Vol. 3, No. 4, pp. 147-167.

## JONES, WILLIAM

1901. "Episodes in the Culture Hero Myth of the Sauks and Foxes." *Journal of American Folklore*, Vol. 14, pp. 225-239.  
 1907. *Fox Texts*. American Ethnological Society Publication, Vol. 1.  
 1911. "Notes on the Fox Indians." *Journal of American Folklore*, Vol. 24, pp. 209-237.  
 1915. *Kickapoo Tales*. Edited by Truman Michelson. American Ethnological Society, Publication, Vol. 9.  
 1916. "Ojibwa Tales from the North Shore of Lake Superior." *Journal of American Folklore*, Vol. 29, pp. 368-391.  
 1917. "*Ojibwa Texts*." Edited by Truman Michelson. American Ethnological Society Publication, Vol. 7, I, II.  
 1939. *Ethnography of the Fox Indians*. Edited by Margaret Welpley Fisher. Bureau of American Ethnology Bulletin 125, Washington.

## DE JOSELIN DE JONG, J. P. B.

1913. "Odzibwe-Texts." *Baessler Archiv*, Beiheft 5, pp. 1-54.  
 1914. Blackfoot Texts from the Southern Peigans. *Verhandelingen de Koninklijke Akademie von Wetenschappen te*, Amsterdam, Vol. 14, No. 4.

## JOSSELYN, JOHN

1675. *An Account of Two Voyages to New England*. . . . By John Josselyn, Gent. The Second Addition. London, printed for G. Widdowes. . . . Reprinted by William Veazie, Boston, 1865.

## JOUKOV, B.

1939. "Maglemosien et Néolithique Forestier. Étude Typologique." *L'Anthropologie*, T. 49, pp. 1-13.

## JUDD, SYLVESTER

1863. *History of Hadley, Including the Early History of Hatfield, South Hadley, Amherst, and Granby*. Northampton.

## KARDINER, A.

1939. *The Individual and his Society*. New York.

## KELLY, ARTHUR R.

1938. "A Preliminary Report on Archaeological Exploration at Macon, Georgia." *Anthropological Papers*, No. 1, Bureau of American Ethnology Bulletin 119, pp. 1-69, Washington.

## KELLY, ARTHUR R. and FAY-COOPER COLE

1931. "Rediscovering Illinois." In *Blue Book of the State of Illinois 1931-1932*, pp. 318-341, Springfield.

- KEYES, CHARLES R.  
 1937. "Article on Iowa Archaeology." In *The Report of the Indianapolis Archaeological Conference*.
- KINIETZ, W. VERNON  
 1940. *The Indians of the Western Great Lakes, 1615-1760*. Occasional Contributions from the Museum of Anthropology of the University of Michigan, No. 10, Ann Arbor.
- KLINERBERG, OTTO  
 1935. *Race Differences*. New York.
- KLOPFER, BRUNO  
 1944. "Form Level Rating." *Rorschach Research Exchange*, Vol. 8, pp. 164-177.
- KLUCKHOHN, CLYDE and O. H. MOWRER  
 1944. "Culture and Personality: A Conceptual Scheme." *American Anthropologist*, Vol. 46, pp. 1-29.
- KNIGHT, JULIA  
 1913. "Ojibwa Tales from Sault Saint Marie, Michigan." *Journal of American Folklore*, Vol. 26, pp. 91-96.
- KNIGHT, MARIAN V.  
 1915. *The Craniometry of Southern New England Indians*. Memoirs of the Connecticut Academy of Arts and Sciences, Vol. 4, New Haven.
- KNOBLOCK, BYRON W.  
 1939. *Bannerstones of the North American Indian*. La Grange.
- KNOX, R. H.  
 1923. "A Blackfoot Version of the Magic Flight." *Journal of American Folklore*, Vol. 36, pp. 401-403.
- KOHL, J. G.  
 1860. *Kitchi-gami; wanderings round Lake Superior*. (Lascelles Wraxall, ed.) London.
- KRIEGER, ALEX D.  
 n.d. Archaeological Horizons in the So-Called Caddo Area. Manuscript in the Department of Anthropology, University of Texas.
- KROEBER, ALFRED L.  
 1908. "Catch-Words in American Mythology." *Journal of American Folklore*, Vol. 21, pp. 222-227.  
 1907. *Gros Ventre Myths and Tales*. American Museum of Natural History, Anthropological Papers, Vol. 1, Pt. 3, New York.  
 1939. *Cultural and Natural Areas of Native North America*. University of California Publications in American Archaeology and Ethnology, Vol. 38.  
 1900. "Cheyenne Tales." *Journal of American Folklore*, Vol. 13, pp. 161-190.
- KROEBER, ALFRED L. and JORGE C. MUELLE  
 1942. *Cerámica Paleteada de Lambayeque*. Revista del Museu Nacional, Vol. 11, No. 1, Lima.
- KUNIKE, H.  
 1923. *Praerie Indianer-Maerchen*. Berlin.
- DE LAGUNA, FREDERICA  
 1934. *The Archaeology of Cook Inlet, Alaska*. University Museum, Philadelphia.  
 1936. "An Archaeological Reconnaissance of the Middle and Lower Yukon Valley, Alaská." *American Antiquity*, Vol. 2, pp. 6-12, Menasha.  
 1939. "A Pottery Vessel from Kodiak Island, Alaska." *American Antiquity*, Vol. 4, pp. 334-343, Menasha.  
 1940. "Eskimo Lamps and Pots." *Journal of the Royal Anthropological Institute*, Vol. 70, Part 1, pp. 53-76.

## LAHONTAN, LOUIS ARMAND, BARON DE

1905. *New Voyages to North-America*. Reprinted from the English edition of 1703. Edited by Reuben G. Thwaites. 2 vols. Chicago.

## LAIDLAW, GEORGE E.

- 1914. "Ojibwa Myths and Tales." *Ontario Annual Archaeological Report*, pp. 77-79.
- 1915. "Ojibwa Myths and Tales." *Ontario Annual Archaeological Report*, pp. 71-90.
- 1916. "Ojibwa Myths and Tales." *Ontario Annual Archaeological Report*, pp. 84-92.
- 1918. "Ojibwa Myths and Tales." *Ontario Annual Archaeological Report*, pp. 74-110.
- 1921-22. "Ojibwa Myths and Tales." *Ontario Annual Archaeological Report*, pp. 84-99.
- 1924-25. "Ojibwa Myths and Tales." *Ontario Annual Archaeological Report*, pp. 34-80.

## LANDES, RUTH

1937. "The Ojibwa of Canada." In "Cooperation and Competition Among Primitive Peoples," Margaret Mead, editor, pp. 87-126. New York and London.

## LANGFORD, GEORGE

1927. "The Fisher Mound Group, Successive Aboriginal Occupations Near the Mouth of the Illinois River." *American Anthropologist*, Vol. 29, pp. 153-206.

## LASLEY, MARY

1902. "Sac and Fox Tales." *Journal of American Folklore*, Vol. 15, p. 170.

## LAUFER, BERTHOLD

1917. *The Reindeer and Its Domestication*. American Anthropological Association Memoirs, Vol. 4, No. 2.

## LAWSON, PUBLIUS V.

1903. "The Occurrence of Obsidian Implements in Wisconsin." *Wisconsin Archeologist*, Vol. 2, No. 4, pp. 95-99.

## LE CLERCQ, CHRESTIEN

1881. *First Establishment of the Faith in New France*. First printed in Paris, 1691. Translated with notes by J. G. Shea. 2 vols. New York.

1910. *New Relation of Gaspesia*. Translated and edited, with a reprint of the original, by W. F. Ganong. Champlain Society, Toronto.

## LEIGHLY, JOHN

1942. "Effects of the Great Lakes on the Annual March of Air Temperature in Their Vicinity." *Papers of the Michigan Academy of Science, Arts, and Letters*, Vol. 27, pp. 377-414.

## LELAND, CHARLES G.

1884. *Algonquin Legends of New England*. Boston.

## LELAND, CHARLES G. and JOHN D. PRINCE

1902. *Kuloskap the Master*.

## LEMLEY, H. J.

1936. "Discoveries Indicating a Pre-Caddo Culture on Red River in Arkansas." *Bulletin of the Texas Archeological and Paleontological Society*, Vol. 8, pp. 25-55, Abilene.

## LEMLEY, H. J. and S. D. DICKINSON

1937. "Archeological Investigations on Bayou Macon in Arkansas." *Bulletin of the Texas Archeological and Paleontological Society*, Vol. 9, pp. 11-47, Abilene.

## LENZ, R.

1904-10. *Diccionario Etimológico de las Voces Chilenas Derivadas de Lenguas Indígenas Americanas*. Santiago de Chile.

## LEWIS, T. M. N.

1943. "Late Horizons in the Southeast." In *Recent Advances in American Archaeology, Proceedings of the American Philosophical Society*, Vol. 86, No. 2, pp. 304-313.

LEWIS, T. M. N. and MADELINE KNEBERG

1941. *The Prehistory of the Chickamauga Basin in Tennessee.* Tennessee Anthropology Papers No. 1.

LILLY, ELI

1937. *Prehistoric Antiquities of Indiana.* Indiana Historical Society, Indianapolis.

LINTON, RALPH

1944. "North American Cooking Pots." *American Antiquity*, Vol. 9, pp. 369-380, Menasha.

LLOYD, T. G. B.

1875. "On the Stone Implements of Newfoundland." *Journal of the Royal Anthropological Institute, Great Britain and Ireland*, Vol. 5, pp. 233-250.

LOSKIEL, H. G.

1794. *History of the Mission of the United Brethren Among the Indians in North America.* Part I. London.

LOTHROP, S. K.

1932. "Indians of the Paraná Delta, Argentina." *Annals of the New York Academy of Sciences*, Vol. 33, pp. 77-232, New York.

LOUNSBURY, FLOYD G.

1942. *Grammar, Texts, and Stem List of the Oneida Language.* University of Wisconsin manuscript.

LOWIE, ROBERT H.

1908a. "Catch-Words for Mythological Motives." *Journal of American Folklore*, Vol. 21, pp. 24-27.

1908b. "The Test-Theme in North American Mythology." *Journal of American Folklore*, Vol. 21, pp. 97-148.

1909a. "Additional Catch-Words." *Journal of American Folklore*, Vol. 22, pp. 332-333.

1909b. "The Hero Trickster Discussion." *Journal of American Folklore*, Vol. 22, pp. 431-433.

1922. *The Religion of the Crow Indians.* American Museum of Natural History Anthropological Papers, Vol. 25, Pt. 2, New York.

1940. "American Culture History." *American Anthropologist*, Vol. 42, pp. 409-428.

LUOMALA, K.

1942. Review of Métraux, "Myths and Tales of the Matako Indians." *Journal of American Folklore*, Vol. 55, pp. 188-190.

MACCLINTOCK, PAUL

1937. "Pleistocene Glacial Stratigraphy of North America." In "Early Man," edited by George Grant MacCurdy, pp. 115-124, Philadelphia.

MACKAY, DOUGLAS

1936. *The Honourable Company: A History of the Hudson's Bay Company.* New York.

MAGLIONI, R.

1938. "Archaeological Finds in Hoifung, Part 1." *The Hong Kong Naturalist*, Vol. 8, Nos. 3 and 4, pp. 208-245.

MALINOWSKI, BRONISLAW

1926. *Myth in Primitive Psychology.*

MANDELBAUM, D. G.

1940. *The Plains Cree.* American Museum of Natural History Anthropological Papers, Vol. 37, Pt. 2, New York.

MANISER, H. H.

1930. "Les Kaingangs de São Paolo." *Proceedings of the 23rd International Congress of Americanists*, 1928, pp. 760-791, New York.

- MANN, CECIL  
 1940. "Mental Measurements in Primitive Communities." *Psychological Bulletin*, Vol. 37, pp. 366-395.
- MARGRY, PIERRE  
 1875-86. *Découvertes et Establissemens des Français dans l'ouest et dans le sud de l'Amérique Septentrionale (1614-1754)*. Parts 1-6, Paris.
- MARQUETTE, JACQUES  
 1698. *Discovery of Some New Countries and Nations in Northern America*. London.
- MARSH, CUTTING  
 1900. "Letter to Rev. David Greene." *Wisconsin Historical Society Collections*, Vol. 15, pp. 104-155.
- MASON, J. ALDEN  
 1930. "Excavations of Eskimo Thule Culture Sites at Point Barrow, Alaska." *Proceedings of the 23rd International Congress of Americanists, New York, 1928*, pp. 383-394.
- MASON, O. T.  
 1896. "Primitive Travel and Transportation." *U. S. National Museum Report for 1894*, pp. 237-593, Washington.  
 1902. "Aboriginal American Harpoons." *U. S. National Museum Report for 1900*, pp. 189-304, Washington.
- MASSON, R. L.  
 1890. *Les Bourgeois de la Compagnie de Nord Ouest*. 2 vols. Quebec.
- MATHER, COTTON  
 1702. *Magnalia Christi Americana*. London.
- MATHIASSEN, THERKEL  
 1927. *Archaeology of the Central Eskimos*. Report of the Fifth Thule Expedition, Vol. 4, 2 pts., Copenhagen.  
 1928. *Eskimo Relics from Washington Land and Hall Land*. Meddeleser om Grønland, Vol. 71, No. 3.  
 1930. *Inugsuk, A Mediaeval Eskimo Settlement in Upernivik District, West Greenland*. Meddeleser om Grønland, Vol. 77, Copenhagen.  
 1933. *Prehistory of the Angmagssalik Eskimos*. Meddeleser om Grønland, Vol. 92, No. 4.  
 1936. *The Eskimo Archaeology of Julianhaap District*. (In collaboration with Erik Holtved). Meddeleser om Grønland, Vol. 118, No. 1.
- MEAD, MARGARET, editor  
 1937. *Cooperation and Competition Among Primitive Peoples*. New York.
- MECHLING, W. H.  
 1914. *Malecite Tales*. Canada Geological Survey, Memoir 49, Anthropological Series, No. 4, Ottawa.
- MÉTRAUX, A.  
 1937. "Études d'ethnographie Toba-Pilaga (Gran Chaco)." *Anthropos*, Vol. 32, pp. 171-194, 378-401.  
 1939. "Myths and Tales of the Matako Indians (The Gran Chaco, Argentina)." *Etnologiska Studier*, Vol. 9, pp. 1-127, Göteborg.
- MICHELSON: TRUMAN  
 1911a. "Menominee Tales." *American Anthropologist*, Vol. 13, pp. 68-88.  
 1911b. "Ojibwa Tales." *Journal of American Folklore*, Vol. 24, pp. 249-250.  
 1911c. "Piegan Tales." *Journal of American Folklore*, Vol. 24, pp. 238-248.  
 1913. "Preliminary Report on the Linguistic Classification of Algonquian Tribes." *28th Annual Report Bureau of American Ethnology 1906-1907*, pp. 221-290b, Washington.

1917. "Notes on Peoria Folklore and Mythology." *Journal of American Folklore*, Vol. 30, pp. 493-495.
1925. "Micmac Tales." *Journal of American Folklore*, Vol. 38, pp. 33-54.
1935. "Phonetic Shifts in Algonquian Languages." *International Journal of American Linguistics*, Vol. 8, pp. 131-171.
1936. "Mammoth or 'Stiff-legged Bear'." *American Anthropologist*, Vol. 38, pp. 141-143.
1937. "Studies Among the Montagnais-Naskapi Indians of the Northern Shore of the St. Lawrence River." *Explorations and Field Work of the Smithsonian Institution in 1937*, pp. 119-122, Washington.
1939. "Linguistic Classification of Cree and Montagnais-Naskapi Dialects." *Anthropological Papers No. 8, Bureau of American Ethnology Bulletin 123*, pp. 67-95, Washington.
- n.d. Unpublished Manuscripts.
- n.d. Manuscript. (File Hills Reserve, Saskatchewan, 1910).
- MILLER, REX K.**
1941. *McKain Site, Dubois County, Indiana*. Indiana Historical Society, Prehistory Research Series, Vol. 2, No. 1.
- MILLS, WILLIAM C.**
1902. "Excavation of the Adena Mound." *Quarterly of the Archaeological and Historical Society of Ohio*, Vol. x, No. 4, Columbus.
1904. "Explorations of the Gartner Mound and Village Site." *Quarterly of the Archaeological and Historical Society of Ohio*, Vol. 13, pp. 129-189, Columbus,
1906. "Explorations of the Baum Mound and Village Site." *Quarterly of the Archaeological and Historical Society of Ohio*, Vol. 15, No. 1, Columbus.
1907. "The Explorations of the Edwin Harness Mound." *Ohio Archaeological and Historical Publications*, Vol. 16, No. 2, pp. 113-193.
1912. "Archaeological Remains of Jackson County." In *Certain Mounds and Village Sites in Ohio*, Vol. 2, No. 2, pp. 61-100, Columbus.
- 1917a. "The Feurt Mounds and Village Site Near Portsmouth, Ohio." In *Certain Mounds and Village Sites in Ohio*, Vol. 3, Pt. 1.
- 1917b. "Explorations of the Westenhaver Mound." In *Certain Mounds and Village Sites in Ohio*, Vol. 2, Pt. 4.
- 1922a. "Exploration of the Mound City Group." *Quarterly of the Ohio Archaeological and Historical Society*, Vol. 31, No. 4, pp. 423-584.
- 1922b. "Mound City Group." In *Certain Mounds and Village Sites in Ohio*, Vol. 3, No. 4, pp. 245-403.
- MONTANDON, G.**
1934. *L'Ologénèse Culturelle: Traité d'Ethnologie Cyclo-culturelle et d'Ergologie Systématique*. Paris.
1936. *Scarpa da Neve*. Enciclopedia Italiana, Vol. 31.
- MONTELius, O.**
1876. "Sur les Souvenirs de l'Âge de la Pierre des Lapons en Suede." *Compte Rendu, Congrès International d'Anthropologie et d'Archéologie et Préhistoriques, VII Session*, Vol. 1, pp. 188-202. Stockholm.
- MONTGOMERY, HENRY**
1906. "Remains of Prehistoric Man in the Dakotas." *American Anthropologist*, Vol. 8, pp. 640-652.
- MOONEY, J. and C. THOMAS**
1907. "Chippewa." *Bureau of American Ethnology, Bulletin 30, Pt. I*, pp. 277-281, Washington.

## MOORE, C. B.

1894. Certain Sand Mounds of the St. John's River, Florida. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 10, Pt. 1 and 2, pp. 5-105; 129-246.
- 1896a. Certain River Mounds of Duval County, Florida. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 10, Pt. 4, Art. 6, pp. 448-502.
- 1896b. Certain Sand Mounds of the Ocklawaha River. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 10, Pt. 4, Art. 8, pp. 518-543.
1897. Certain Aboriginal Mounds of the Georgia Coast. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 11, Pt. 1, Art. 1, pp. 5-139.
1899. A Cache of Pendant Ornaments. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 11, Pt. 2, Art. 7, pp. 189-197.
1900. Certain Aboriginal Remains of the Alabama River. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 11, Pt. 3, Art. 10, pp. 289-351.
1901. Certain Aboriginal Remains of the Northwest Florida Coast, Part I. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 11, Pt. 4, Art. 13, pp. 421-499.
1902. Certain Aboriginal Remains of the Northwest Florida Coast, Part II. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 12, Pt. 2.
- 1905a. Certain Aboriginal Remains, Lower Tombigbee River. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 12, Pt. 2, Art. 3, pp. 247-279.
- 1905b. Certain Aboriginal Remains on Mobile Bay and on Mississippi Sound. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 13, Pt. 2, Art. 4, pp. 279-299.
- 1907a. Crystal River Revisited. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 13, Pt. 3, Art. 7, pp. 407-427.
- 1907b. Mounds of the Lower Chattahoochee and Lower Flint Rivers. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 13, Pt. 3, Art. 8, pp. 427-458.
1908. Certain Mounds of Arkansas and Mississippi. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 13, Pt. 4, pp. 481-600.
1909. Antiquities of the Ouachita Valley. *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. 14, Pt. 1, Art. 1, pp. 7-174.
1912. Some Aboriginal Sites on Red River. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 14, Pt. 4.
1915. Aboriginal Sites on the Tennessee River. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 16, Pt. 2.
1916. Some Aboriginal Sites on Green River, Kentucky. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 16, Pt. 3.
1918. The Northwestern Florida Coast Revisited. *Journal of the Academy of Natural Sciences of Philadelphia*, 2nd series, Vol. 16, Pt. 4, pp. 513-577.
- MOOREHEAD, WARREN K.
1906. *A Narrative of Explorations in New Mexico, Arizona, Indiana, etc.* Department of Archaeology Bulletin 3, Phillips Academy, Andover.
1910. *The Stone Age in North America.* 2 Vols. Boston.
1916. "The Problem of the Red Paint People." In *Holmes Anniversary Volume*, pp. 359-365, Washington.
- 1922a. "The Hopewell Mound Group of Ohio." *Field Museum of Natural History, Publication 211, Anthropological series*, Vol. 6, No. 5, Chicago.
- 1922b. *The Archaeology of Maine.* Andover.
1929. *The Cahokia Mounds.* University of Illinois Bulletin, Vol. 26, No. 4, Urbana.
1932. "Exploration of the Etowah Site in Georgia." In "Etowah Papers," Warren K. Moorehead, ed. New Haven.

## MORRIS, EARL H.

1927. "The Beginnings of Pottery Making in the San Juan Area, Unfired Prototypes and the Wares of the Earliest Ceramic Period." *American Museum of Natural History, Anthropological Papers*, Vol. 28, Pt. 2, pp. 125-198, New York.

## MORTON, THOMAS

1637. *New English Canaan, or New Canaan. Containing an Abstract of New England*, Amsterdam, Jacob Frederick Stam. With Introductory Matter and Notes by Charles Francis Adams, Jr. Boston, Published by the Prince Society, 1883.

## MOUNTFORD, C. P. and R. M. BERNDT

1941. "Making Fire by Percussion in Australia." *Oceania*, Vol. 11, pp. 342-344.

## MOURT'S RELATION

1620. *The Journal of the Pilgrims at Plymouth, in New England, in 1620*. Reprinted from the original volume. New York, 1849.

## MURDOCK, G. P.

1941. "Ethnographic Bibliography of North America." *Yale Anthropological Series*, Vol. 1, pp. 93-105.

## MUSTERS, [G. C.]

1871. "On the Races of Patagonia." *Journal of the Anthropological Institute*, Vol. 1, pp. 193-207.

## MCCLINTOCK, WALTER

1910. *The Old North Trail*. London.

## McKERN, W. C.

1928. "The Neale and McClaughry Mound Groups." *Milwaukee Public Museum Bulletin*, Vol. 3, No. 3.

1930. "The Kletzien and Nitschke Mound Groups." *Milwaukee Public Museum Bulletin*, Vol. 3, No. 4.

1931a. "Wisconsin Pottery." *American Anthropologist*, Vol. 33, pp. 383-389.

1931b. "A Wisconsin Variant of the Hopewell Culture." *Milwaukee Public Museum Bulletin*, Vol. 10, No. 2.

1936. "Notes and News." *American Antiquity*, Vol. 11, p. 148. Menasha.

1937. "An Hypothesis for the Asiatic Origin of the Woodland Culture Pattern." *American Antiquity*, Vol. 3, pp. 138-143. Menasha.

1939. "Wisconsin Archeology in the Light of Recent Finds in Other Areas." *Wisconsin Archeologist*, n.s. Vol. 20, pp. 1-5.

## MACLEAN, JOHN

1890. "Blackfoot Indian Legends." *Journal of American Folklore*, Vol. 3, pp. 296-298.

1893. "Blackfoot Mythology." *Journal of American Folklore*, Vol. 6, pp. 165-172.

1896. *Canadian Savage Folk*. Toronto.

1932. "John McLean's Notes of a Twenty-five Year's Service in the Hudson's Bay Territory." William S. Wallace, editor. Toronto, Champlain Society.

## MACRITCHIE, DAVID

1892. *The Ainos*. Supplément au Tome IV des Archives Internationales d'Ethnographie, Leiden.

## NANSEN, F.

1890. *The First Crossing of Greenland*. Translated by H. M. Gepp. 2 vols. London.

## NEILL, E. D.

1885. "History of the Ojibways." *Collections of the Minnesota Historical Society*, Vol. 5, pp. 395-510.

- NELSON, N. C.
1937. "Notes on Cultural Relations Between Asia and America." *American Antiquity*, Vol. 2, pp. 267-272, Menasha.
- NEUMANN, GEORG K.
1937. "Preliminary Notes on the Crania from Fulton County, Illinois." Appendix IV, pp. 227-264. In Cole, Fay Cooper and Thorne Deuel, *Rediscovering Illinois*, Chicago.
- 1941a. "Crania from the Porter Mound, Ross County, Ohio." *Papers of the Michigan Academy of Science, Arts, and Letters*, Vol. 36, pp. 479-488.
- 1941b. "The Crania from the Hagan Mound and Their Relationship to Those of Two Late Prehistoric Populations of Central Illinois." In Baker, Frank C., et al, 1941, pp. 79-82.
- 1941c. "Physical Types of American Indians of the Southeastern States." *Proceedings of the 12th Annual Meeting, American Association of Physical Anthropologists, American Journal of Physical Anthropology*, Vol. 28.
- 1942a. "The Origin of the Prairid Physical Type of American Indian." *Papers of the Michigan Academy of Science, Arts and Letters*, Vol. 27, pp. 539-542.
- 1942b. *The Physical Relationships of the Indians of the Fort Ancient Aspect*. Ph.D. Thesis, University of Chicago.
- n.d. Crania from the Siouan Village on Tutelo Island, Virginia and from Keyanwee, Randolph County, North Carolina. manuscript.
- NEWMAN, MARSHALL T.
1941. "Physical Types of American Indians of the Southeastern States." *American Journal of Physical Anthropology*, Vol. 28.
- NEWMAN, MARSHALL T. and CHARLES E. SNOW
1942. "Preliminary Report on the Skeletal Material from Pickwick Basin, Alabama." In Webb and DeJarnette, 1942. pp. 393-507.
- NICHOLS, G. E.
1935. "The Hemlock-White Pine-Northern Hardwood Region of Eastern North America." *Ecology*, Vol. 16, pp. 403-422.
- NICHOLS, JOHN B.
1928. *Notes on Rock Crevice Burials in Jefferson County at Point Peninsula*. Researches and Transactions, New York State Archaeological Association, Lewis H. Morgan Chapter, Vol. 5, Pt. 4.
- NICOLAR, JOSEPH
1893. *The Life and Traditions of the Red Man*. Bangor.
- NIELSON, YNGAR
1907. *Universitetets Ethnografiske Samlinger, 1857-1907*. Meddelelser fra det Ethnografiske Musaeum, Christiania.
- NORDENSKIÖLD, E.
- 1919, 1920, 1924, 1931. *Comparative Ethnographical Studies*, 1-3, 9, Göteborg.
- NUSBAUM, JESSE
1922. *A Basket-Maker Cave in Kane County, Utah*. Indian Notes and Monographs, No. 29, New York.
- OETTEKING, BRUNO
1930. *Skeletal Remains from Texas*. Indian Notes and Monographs, Vol. 7, No. 3, New York.
- OHYAMA, K.
1932. *Ueber die Muschelhaufen Numazu, beim Dorf Inai, Prov. Rikuzen*. Zeitschrift für Praehistorie, Bd. 4, Heft 1. [In Japanese]

- OLDMIXON, J.
1931. "The British Empire in America." London, 1708. Reprinted in part in Tyrrell, 1931, pp. 371-410.
- ORR, KENNETH G.
1939. "Indian Villages Surrounding the Spiro Mounds, Le Flore County, Oklahoma." *Society for American Archaeology Notebook*, December, pp. 70-77. mimeographed.
- OSGOOD, CORNELIUS
- 1936a. *The Distribution of the Northern Athapaskan Indians*. Yale University Publications in Anthropology, No. 7, New Haven.
- 1936b. *Contributions to the Ethnography of the Kutchin*. Yale University Publications in Anthropology, No. 14, New Haven.
1937. *The Ethnography of the Tanaina*. Yale University Publications in Anthropology, No. 16, New Haven.
- OVER, W. H. and ELMER E. MELEEN
1941. *A Report on an Investigation of the Brandon Village Site and the Split Rock Creek Mound*. Archaeological Studies, Circular No. 3, University of South Dakota Museum.
- OWEN, M. A.
1904. *Folklore of the Musquakie Indians of North America*. Folklore Society Publication, Vol. 51, London.
- PAGET, A. M.
1909. *The People of the Plains*. Toronto.
- PARKER, ARTHUR C.
1907. *An Erie Indian Village and Burial Site at Ripley, Chautauqua County, New York*. Bulletin of the New York State Museum, No. 117.
1910. *Iroquois Uses of Maize*. Bulletin of the New York State Museum, No. 144, pp. 5-119.
1922. *The Archaeological History of New York*. Parts 1 and 2. Bulletin of the New York State Museum, Nos. 235-238.
- PARSONS, ELSIE CLEWS
1925. "Micmac Folklore." *Journal of American Folklore*, Vol. 38, pp. 55-133.
- PATTERSON, GEORGE
1891. "The Beothicks or Red Indians of Newfoundland." *Proceedings and Transactions of the Royal Society of Canada, Section II*, pp. 123-171.
- PEITHMAN, IRVIN
1939. "Evidences of Early Woodland Culture at Chalk Bluff Rock Shelter." *American Antiquity*, Vol. 4, pp. 268-272, Menasha.
- PERRINE, THOMAS M.
1874. "Antiquities of Union County, Illinois." *Annual Report of the Smithsonian Institution for 1873*, p. 410, Washington.
- PETITOT, E.
1886. *Traditions Indiennes du Canada Nord-Ouest*. Paris.
- PETRI, B. E.
1916. "Neoliticheskiiâ nakhodi na beregu Baškala." *Akademiiâ nauk USSR. Muzei antropologii i etnografii*, Leningrad. Sbornik, Petrograd. tom III, pp. 113-132. [In Russian.]
- PHILHOWER, CHARLES A.
1936. *The Semilunar Knife in New Jersey*. The Archaeological Society of New Jersey, Leaflet 5.
- PHILLIPS, PHILIP
1940. "Mexican Influence upon the Indian Cultures of the Southeastern United States in the Sixteenth and Seventeenth Centuries." In *The Maya and Their Neighbors*, pp. 349-367, New York.

## PIERS, HARRY

1895. "Relics of the Stone Age in Nova Scotia." *Proceedings and Transactions, Nova Scotia Institute of Natural Science*, n.s., Vol. 9, pp. 26-58.

## POWELL, J. W.

1891. "Indian Linguistic Families of America North of Mexico." *7th Annual Report Bureau of American Ethnology 1885-86*, pp. 1-142, Washington.

1894. "Report of the Director." *12th Annual Report Bureau of American Ethnology 1890-91*. pp. XXI-XLVIII, Washington.

## PRATT, W. H.

1876. "Report of Explorations of the Ancient Mounds at Toolesboro, Louisa County, Iowa." *Proceedings of the Davenport Academy*, Vol. 1, pp. 106-111.

## PREST, W. H.

1896. "Measurements of Two Beothuk Skulls" *Proceedings and Transactions of the Nova Scotia Institute of Science*, Vol. 9, pt. 3, pp. lxxxvi-xc.

## PRINCE, JOHN D.

1897. "The Passamaquoddy Wampum Records." *Proceedings, American Philosophical Society*, Vol. 36, pp. 479-495.

1900. "Some Passamaquoddy Witchcraft Tales." *Proceedings, American Philosophical Society*, Vol. 38, pp. 181-189.

1919. "A Micmac Manuscript." *Proceedings of the International Congress of Americanists, Quebec*, pp. 87-124.

1909. "A Passamaquoddy Aviator." *American Anthropologist*, Vol. 11, pp. 628-650.

1921. *Passamaquoddy Texts*. Publication of the American Ethnological Society, Vol. 10.

## PRUD'HOMME, L. A.

1919. "Carmel, Une Legende de la Tribu des Cris." *Royal Society of Canada, Proceedings and Transactions, 3rd series*, Vol. 13, Sec. I, pp. 95-100.

## PUTNAM, FREDERICK WARD

1875. "The Pottery of the Mound Builders." *The American Naturalist*, Vol. 9, No. 6, pp. 321-338; Vol. 9, No. 7, pp. 393-409.

1887. "Report of the Curator." *Eighteenth and Nineteenth and Twentieth Annual Reports, Peabody Museum of American Archaeology and Ethnology*, Vol. 3, Nos. 5 and 6, 7.

## PUTNAM, FREDERICK WARD and CHARLES C. WILLOUGHBY

1896. "Symbolism in Ancient American Art." *Proceedings of the American Association for the Advancement of Science*, Vol. 46, pp. 302-322.

## QUIMBY, GEORGE I., JR.

1940. "The Manitunik Eskimo Culture of East Hudson's Bay." *American Antiquity*, Vol. 6, pp. 148-165, Menasha.

1941. *The Goodall Focus. An Analysis of Ten Hopewellian Components in Michigan and Indiana*. Indiana Historical Society, Prehistory Research Series, Vol. 2, No. 2, pp. 63-161, Indianapolis.

1942. "The Natchezan Culture Type." *American Antiquity*, Vol. 7, pp. 255-267, Menasha.

## RADIN, PAUL

1914. *Some Myths and Tales of the Ojibwa of Southeastern Ontario*. Canada Geological Survey, Memoir 48, Anthropological Series, No. 2.

1915. *Literary Aspects of North American Mythology*. Canada, Department of Mines, Museum Bulletin, No. 16, Anthropological Series, No. 6.

## RADIN, PAUL and A. B. REAGAN

1928. "Ojibwa Myths and Tales." *Journal of American Folklore*, Vol. 41, pp. 61-146.

- RAE, J.
1882. "[Discussion]" *Journal Anthropological Institute*, Vol. 12, pp. 274-275.
- RAINEY, FROELICH G.
1939. "Archaeology in Central Alaska." *American Museum of Natural History, Anthropological Papers*, Vol. 36, Pt. 4, pp. 351-405, New York.
1941. "The Ipiutak Culture at Point Hope, Alaska." *American Anthropologist*, Vol. 43, pp. 364-375.
- RAND, SILAS T.
1894. *Legends of the Micmacs*. New York.
- RAUDONIKAS, V. I.
1936. "Les Gravures Rupestres des Bords du Lac Onega et de la Mer Blanche." *Akademia nauk USSR. Trudy Instituta antropologii, Arkheologii i etnografii*. tom ix-x. [In Russian with French Summary, Vol. 9, pp. 143-205; Vol. 10, pp. 105-162.]
- RAUP, HUGH M.
1934. *Phytogeographic Studies in the Peace and Upper Liard River Regions, Canada, with a Catalogue of the Vascular Plants*. Contributions from the Arnold Arboretum of Harvard University, Vol. 6, Jamaica Plain.
1937. "Recent Changes of Climate and Vegetation of Southern New England and Adjacent New York." *Journal of the Arnold Arboretum*, Vol. 18, pp. 79-117.
1941. "Botanical Problems in Boreal America." *Botanical Review*, Vol. 7, pp. 147-248.
1942. Memorandum and Correspondence on Forest Types in Northeastern North America.
1945. "Forests and Gardens along the Alaska Highway." *Geographical Review*, Vol. 35, pp. 22-48.
- RAY, V. F.
1941. "Historic Backgrounds of the Conjuring Complex in the Plateau and the Plains." In *Language, Culture and Personality, Essays in Memory of Edward Sapir*, pp. 204-216, Menasha.
- REAGAN, ALBERT B.
- 1921a. "The Flood Myth of the Chippewas." *Proceedings, Indiana Academy of Sciences, 1919*, pp. 347-352.
- 1921b. "A Trip Among the Rainy Lakes." *Proceedings, Indiana Academy of Sciences, 1919*, pp. 253-259.
- REICHARD, GLADYS A.
1910. "Literary Types and the Dissemination of Myths." *Journal of American Folklore*, Vol. 34, pp. 269-307.
- RITCHIE, W. A.
- 1932a. "The Algonkin Sequence in New York." *American Anthropologist*, Vol. 34, pp. 406-414.
- 1932b. *The Lamoka Lake Site; the Type Station of the Archaic Algonkin Period in New York*. Researches and Transactions of the New York State Archaeological Association, Vol. 7, No. 4, Rochester.
1934. *An Algonkin-Iroquois Contact Site on Castle Creek, Broome County, New York*. Research Records of the Rochester Museum of Arts and Sciences, No. 2.
- 1936a. *A Prehistoric Fortified Village Site at Canandaigua, Ontario County, New York*. Research Records of the Rochester Museum of Arts and Sciences, No. 3.
- 1936b. *New Evidence Relating to the Archaic Occupation of New York*. Researches and Transactions of the New York State Archaeological Association, Vol. 8, No. 1, Rochester.

1937. "Culture Influences from Ohio in New York Archaeology." *American Antiquity*, Vol. 2, pp. 182-194, Menasha.
- 1938a. *Certain Recently Explored New York Mounds and Their Probable Relation to the Hopewell Culture*. Research Records of the Rochester Museum of Arts and Sciences, No. 4.
- 1938b. "A Perspective of Northeastern Archaeology." *American Antiquity*, Vol. 4, pp. 94-112, Menasha.
- 1939a. "The Frontenac Island Village and Burial Site." *Museum Service*, Rochester Museum of Arts and Sciences, November-December.
- 1939b. "A Village and Burial Site on Frontenac Island." *Museum Service*, Rochester Museum of Arts and Sciences, Vol. 12, No. 8, pp. 174-175.
- 1940a. "A Prehistoric Burial Site at Sea Breeze, New York." *Museum Service*, Rochester Museum of Arts and Sciences, March.
- 1940b. *Two Prehistoric Village Sites at Brewerton, New York*. Researches and Transactions of the New York State Archeological Association, Vol. 9, No. 1.
1944. *The Pre-Iroquoian Occupations of New York State*. Rochester Museum of Arts and Sciences, Memoir No. 1.
1945. *An Early Site in Cayuga County, New York; Type Station of the Frontenac Focus, Archaic Pattern*. Researches and Transactions of the New York State Archaeological Association, Vol. 10, No. 1, Rochester.
1946. *A Stratified Site at Brewerton, New York*. Researches and Transactions of the New York State Archaeological Association, Vol. 11, No. 1, Rochester.

## RIVET, PAUL

1909. *Recherches Anthropologique sur la Basse-Californie*. Journal Societe Americanistes de Paris, n.s. Vol. 6, fasc. 1 and 2.

## ROBERTS, FRANK H. H., JR.

1939. *Archeological Remains in the Whitewater District, Eastern Arizona. Part 1, House Types*. Bureau of American Ethnology, Bulletin 121, Washington.
1940. *Developments in the Problem of the North American Paleo-Indian*. Smithsonian Miscellaneous Collections, Vol. 100, pp. 51-116, Washington.

## ROBSON, JOSEPH

1752. *An Account of Six Years Residence in Hudson's-Bay, from 1733 to 1736, and 1744 to 1747*. London.

## ROSALES, DIEGO DE

- 1877-78. *Historia General de el Reyno de Chile, 1674-*, editor, B. Vicuña Mackenna. 3 vols. Valparaiso.

## ROSIER, JAMES

1605. "A True Relation of the Most Prosperous Voyage Made This Present Yeere 1605, by Captaine George Waymouth, in the Discovery of the Land of Virginia. London." Reprinted in Burrage, Henry S., *Gorges and the Grant of the Province of Maine, 1622, A Tercentenary Memorial*.

## ROWE, JOHN H.

1940. *Excavations in the Waterside Shell Heap, Frenchman's Bay, Maine*. Papers of the Excavators' Club, Vol. 1, No. 3, Cambridge, Mass.

## ROWLEY, GRAHAM

1940. "The Dorset Culture of the Eastern Arctic." *American Anthropologist*, Vol. 42, pp. 490-499.

## RUSSELL, FRANK

1898. *Explorations in the Far North*. Iowa University.

## RYDBECK, OTTO

1930. "The Earliest Settling of Man in Scandinavia." *Acta Archaeologica*, Vol. 1, pp. 55-86.

## RYGH, OLUF M.

1875. "Sur le Groupe Arctique de l'Âge de la Pierre Polie en Norvège." *Compte Rendu, Congrès International d'Anthropologie and d'archéologie Préhistoriques, VII<sup>me</sup> Session*, Vol. 1, pp. 177-187. Stockholm.

## SAPIR, EDWARD

1916. *Time Perspective in Aboriginal American Culture*. Canada Department of Mines, Geological Survey, Memoir 90, Anthropological Series, No. 13, Ottawa.

## SAYLES, E. B.

1941. *Archaeology of the Cochise Culture*. Medallion Papers, No. 29, Globe.

## SCHAIRER, JOHN FRANK

1931. *The Minerals of Connecticut*. State of Connecticut, State Geological and Natural History Survey, Bulletin 51, Hartford.

## SCHIMPER, A. F. W.

1903. *Plant Geography Upon a Physiological Basis*. Oxford.

## SCHMERLER, HENRIETTA

1931. "Trickster Marries His Daughter." *Journal American Folklore*, Vol. 44, pp. 196-207.

## SCHMIDT, W.

1926-40. *Die Ursprung der Gottesidee*. 7 vols. Münster.

## SCHOOLCRAFT, HENRY R.

1851-57. *Information Respecting the History, Conditions and Prospects of the Indian Tribes of the United States*. Philadelphia.

1856. *The Myth of Hiawatha*. Philadelphia and London.

## SCHUCHERT, CHARLES and CARL O. DUNBAR

1937. *Outlines of Historical Geology*. 3rd edition, New York and London.

## SCHULTZ, JAMES W.

1916. *Blackfoot Tales of Glacier National Park*. Boston.

## SCHWANTES, G.

1928. "Nordisches Paläolithikum und Mesolithikum." *Mitteilungen Hamburg Museum für Völkerkunde*, Bd. 13, pp. 158-252. Hamburg.

## SEARS, PAUL B.

1932. "The Archaeology of Environment of Eastern North America." *American Anthropologist*, Vol. 34, pp. 610-622.

1933. "Climatic Change as a Factor in Forest Succession." *Journal of Forestry*, Vol. 31, pp. 934-942.

## SELTZER, C. C.

1933. "The Anthropometry of the Western and Copper Eskimos, based on data of Vilhjalmur Stefansson." *Human Biology*, Vol. 5, pp. 313-370.

## SERRANO, ANTONIO

1933. *Observaciones Sobre la Alfarería de los Médanos de Colón*. Memorias del Museo de Paraná, No. 6, Paraná, Argentina.

## SETZLER, FRANK M.

1930. *The Archaeology of the Whitewater Valley*. Indiana History Bulletin, Vol. 7, No. 12, Indianapolis.

1933. "Pottery of the Hopewell Type from Louisiana." *Proceedings of the U. S. National Museum*, Vol. 82, No. 2963, Art. 22, pp. 1-21, Washington.

1940. *Archaeological Perspectives in the Northern Mississippi Valley*. Smithsonian Miscellaneous Collections, Vol. 100, pp. 253-290, Washington.

- SETZLER, FRANK M. and JESSE D. JENNINGS  
 1941. *Peachtree Mound and Village Site, Cherokee County, North Carolina*. Bureau of American Ethnology, Bulletin 131, Washington.
- SHAPIRO, H. L.  
 1934. "Some Observations on the Origin of the Eskimo." *Proceedings of the Fifth Pacific Scientific Congress*, pp. 2723-2732.
- SHETELIG, HAAKAN and HJALMAR FALK  
 1937. *Scandinavian Archaeology*. Translated by E. V. Gordon. Oxford.
- SHETRONE, HENRY C.  
 1920. "The Culture Problem in Ohio Archaeology." *American Anthropologist*, Vol. 22, pp. 144-173.  
 1923. "Explorations of the Campbell Island Village Site and the Hine Mound and Village Site." In *Certain Mounds and Village Sites in Ohio*, Vol. 4, Pt. 1, pp. 3-37.  
 1926. "Explorations of the Ginther Mound." In *Certain Mounds and Village Sites in Ohio*, Vol. 4, No. 3, pp. 61-75.  
 1930. *The Mound-Builders*. New York.  
 1936. "The Folsom Phenomena as seen from Ohio." *Ohio State Archaeological and Historical Quarterly*, Vol. 45, No. 3, pp. 240-256.
- SHETRONE, HENRY C. and EMERSON F. GREENMAN  
 1931. "Explorations of the Seip Group of Prehistoric Earthworks." *Ohio Archaeological and Historical Quarterly*, Vol. 40, No. 3.
- SHIPPE, J. M.  
 1941. "Hopewellian and Middle Mississippi Remains from the Kansas City Area." *The Missouri Archaeologist*, Vol. 7, No. 2, pp. 28-32.
- SIEBERT, FRANK T.  
 1940. [Review of] "Leçons Grammaticales Théoriques et Pratiques de la Langue Micmacque." *American Anthropologist*, Vol. 42, pp. 331-333.  
 1941. "Certain Proto-Algonquian Consonant Clusters." *Language*, Vol. 17, pp. 298-303.
- SIMMS, S. C.  
 1906. "Myths of the Bungees or Swampy Indians of Lake Winnipeg." *Journal of American Folklore*, Vol. 19, pp. 334-340.
- SIMPSON, A. M.  
 1939. *The Kingston Village Site*. Peoria Academy of Science.  
 Sixth Southeastern Archaeological Conference.  
 1941. Lexington, Kentucky. (mimeographed)
- SKINNER, ALANSON B.  
 1909. "The Lenapé Indians of Staten Island." In "The Indians of Greater New York and the Lower Hudson," edited by C. Wissler, American Museum of Natural History, Anthropological Papers, Vol. 3, pp. 3-62, New York.  
 1911. *Notes on the Eastern Cree and Northern Saulteaux*. American Museum of Natural History, Anthropological Papers, Vol. 9, Pt. 1.  
 1916. "Plains Cree Tales." *Journal of American Folklore*, Vol. 29, pp. 341-367.  
 1917. "Chronological Relations of Coastal Algonquian Culture." *Proceedings of the 19th International Congress of Americanists*, pp. 52-58, Washington.  
 1919a. *Exploration of Aboriginal Sites at Throgs Neck and Clasons Point, New York City*. Contributions, Museum of the American Indian, Heye Foundation, Vol. 5, No. 4, New York.  
 1919b. "Plains Ojibwa Tales." *Journal of American Folklore*, Vol. 32, pp. 280-305.

- 1920a. *Archaeological Investigations on Manhattan Island, New York City*. Indian Notes and Monographs, Museum of the American Indian, Heye Foundation, Vol. 2, No. 6, New York.
- 1920b. *Medicine Ceremony of the Menonimi, Iowa, and Wahpeton Dakota*. Indian Notes and Monographs, Vol. 4, New York.
1921. *Notes on Iroquois Archaeology*. Indian Notes and Monographs, Miscellaneous No. 18, New York.
1925. *Ethnology of the Sauk Indians*. Bulletin of the Public Museum of Milwaukee, Vol. 5.
1927. *The Mascoutens or Prairie Potawatomi Indians*. Bulletin of the Public Museum of Milwaukee, Vol. 6, No. 3.
- 1928a. "Bungi Tales." *Journal of American Folklore*, Vol. 41, pp. 159-171.
- 1928b. "Sauk Tales." *Journal of American Folklore*, Vol. 41, pp. 147-159.
1932. *The Indians of Manhattan Island and Vicinity*. American Museum of Natural History, . Guide Leaflet Series, No. 41, New York.
- SKINNER, ALANSON B. and J. V. SATTERLEE**
1915. *Folklore of the Menomini Indians*. American Museum of Natural History, Anthropological Papers, Vol. 13, pp. 217-545.
- SMITH, E. R.**
1855. *The Araucanians*. New York.
- SMITH, HARLAN I.**
1906. "Some Ojibwa Myths and Traditions." *Journal of American Folklore*, Vol. 19, pp. 215-230.
- SMITH, HARLAN I. and W. J. WINTERBERG**
1929. *Some Shell-heaps in Nova Scotia*. National Museum of Canada, Bulletin 47, Anthropological Series, No. 9, Ottawa.
- SMITH, WALTER B.**
1929. *The Jones Cove Shell-heap at West Gouldsboro, Maine*. Bulletin of the Lafayette National Park Museum, No. 1, Bar Harbor.
1930. *The Lost Red Paint People of Maine*. Bulletin of the Lafayette National Park Museum, No. 2, Bar Harbor.
- SNOW, CHARLES E.**
1941. "The Skeletal Remains from the Morgan Stone Mound." In *The Morgan Stone Mound* by W. S. Webb, pp. 282-288.
- SOLBERG, O.**
1907. *Beiträge zur Vorgeschichte der Ost-Eskimo*. Christiania.
- SPAULDING, ALBERT CLANTON**
- n.d. Notes on the Archaeology of the Boreal Forest Zone. Manuscript.
- SPECK, FRANK G.**
- 1915a. *Myths and Folklore of the Timiskaming Algonquin*. Canada Geological Survey, Memoir 71, Anthropological Series No. 9, Ottawa.
- 1915b. *Myths and Folklore of the Timagami Ojibwa*. Canada Geological Survey, Memoir 71, Anthropological Series No. 9, pp. 28-82, Ottawa.
- 1915c. "Myths from Little Whale River." *Journal of American Folklore*, Vol. 28, pp. 70-77.
- 1915d. "Penobscot Tales." *Journal of American Folklore*, Vol. 28, pp. 52-58.
- 1915e. "Some Micmac Tales from Cape Breton Island." *Journal of American Folklore*, Vol. 28, pp. 59-69.
1916. "An Ancient Archaeological Site on the Lower St. Lawrence." In *Holmes Anniversary Volume*, pp. 427-433, Washington.

1917. "Malecite Tales." *Journal of American Folklore*, Vol. 30, pp. 479-485.
1918. "Penobscot Transformer Tales." *International Journal of American Linguistics*, Vol. 1, No. 3.
1919. *Penobscot Shamanism*. American Anthropological Association, Memoirs, Vol. 6, No. 4, pp. 239-288.
1922. *Beothuk and Micmac*. Indian Notes and Monographs, Museum of the American Indian, Heye Foundation, No. 22, New York.
1925. "Montagnais and Naskapi Tales from the Labrador Peninsula." *Journal of American Folklore*, Vol. 38, pp. 1-32.
1926. "Culture Problems in Northeastern North America." *American Philosophical Society Proceedings*, Vol. 65, No. 4, pp. 272-311.
1928. "Wawenock Myth Texts from Maine." *Bureau of American Ethnology Annual Report*, Vol. 43, pp. 169-197, Washington.
1931. "Montagnais-Naskapi Bands and Early Eskimo Distribution in the Labrador Peninsula." *American Anthropologist*, Vol. 33, pp. 557-600.
- 1935a. *Naskapi, The Savage Hunters of the Labrador Peninsula*. Norman, Oklahoma.
- 1935b. "Penobscot Tales and Religious Beliefs." *Journal of American Folklore*, Vol. 48, pp. 1-107.
1936. "Inland Eskimo Bands of Labrador." In "Essays in Anthropology presented to A. L. Kroeber," pp. 313-330, Berkeley, California.
- SPECK, FRANK G. and LOREN C. EISELEY
1939. "Significance of Hunting Territory Systems of the Algonkian in Social Theory." *American Anthropologist*, Vol. 41, pp. 269-280.
1942. "Montagnais-Naskapi Bands and Family Hunting Districts of the Central and Southeastern Labrador Peninsula." *American Philosophical Society, Proceedings*, Vol. 85, pp. 215-242.
- SPECK, FRANK G. and GLADYS TANTAQUIDGEON
- n.d. Analytic and Comparative Notes on the Transformer Myths. Manuscript.
- SQUIER, E. G.
- 1848a. "Manabozho and the Great Serpent." *American Review*, Pt. 2, pp. 395-398.
- 1848b. "Ne-she-kay-be-nais, or the 'Lone Bird'." *American Review*, Pt. 2, pp. 255-259.
- SQUIER, EPHRAIM G. and EDWIN H. DAVIS
1848. *Ancient Monuments of the Mississippi Valley*. Smithsonian Contributions to Knowledge, Vol. 1, Washington.
- STALLINGS, W. S., JR.
1941. "A Basketmaker II Date from Cave du Pont, Utah." *Tree Ring Bulletin*, Vol. 8, No. 1.
- STAMP, HARLEY
- 1915a. "A Malecite Tale." *Journal of American Folklore*, Vol. 28, pp. 243-248.
- 1915b. "The Water-Fairies." *Journal of American Folklore*, Vol. 28, pp. 310-316.
- STAMP, L. DUDLEY
1929. *Asia, an Economic and Regional Geography*. London.
- STEENSBY, H. P.
1916. *An Anthropogeographical Study of the Origin of the Eskimo Culture*. Meddelelser om Grønland, 53, København.
- STEFÁNSSON, V.
1932. *The Friendly Arctic*. New York.
- STEWART, JAMES
1904. "Rupert's Land Indians in the Olden Times." *Ontario Archaeological Report*, pp. 89-100.

## STEWART, T. DALE

1939. *Anthropometric Observations on the Eskimo and Indians of Labrador*. Field Museum of Natural History, Anthropological Series, Vol. 31, No. 1.

1940. "Some Historical Implications of Physical Anthropology in North America." *Smithsonian Miscellaneous Collections*, Vol. 100, pp. 15-51, Washington.

1941. "Skeletal Remains from the Peachtree Site, North Carolina." In Setzler and Jennings, 1941, pp. 81-98.

## STRONG, WM. DUNCAN

1930. "A Stone Culture from Northern Labrador and Its Relation to the Eskimo-like Cultures of the Northeast." *American Anthropologist*, Vol. 32, pp. 126-144.

1935. *An Introduction to Nebraska Archeology*. Smithsonian Miscellaneous Collections, Vol. 93, No. 10, Washington.

1940. *From History to Prehistory in the Northern Great Plains*. Smithsonian Miscellaneous Collections, Vol. 100, pp. 291-353, Washington.

n.d. Naskapi Folklore from the Barren Ground, Davis Inlet, and White Whale River Bands. Manuscript.

## SWAN, JAMES G.

1869. *The Indians of Cape Flattery*. Smithsonian Contributions to Knowledge, No. 220.

## SWANTON, JOHN R.

1910. "Some Practical Aspects of the Study of Myths." *Journal of American Folklore*, Vol. 23, pp. 1-8.

## SWINDELEHURST, FRED

1905. "Folklore of the Cree Indians." *Journal of American Folklore*, Vol. 18, pp. 139-142.

## TALLGREN, A. M.

1936. "Archaeological Studies in Soviet Russia." *Eurasia Septentrionalis Antiqua*, Vol. 10, pp. 129-170.

## TANNER, JOHN

1830. *A Narrative of the Captivity and Adventures of John Tanner During Thirty Years Residence among the Indians in the Interior of North America*. Prepared for the Press by Edwin James, M.D., New York.

## TAUNAY, A. D'E.

1918. "Os Indios Kaingángs." *Revista do Museu Paulista*, Vol. 10, pp. 569-628, São Paolo.

## TEIT, J.

1921. "Plains Cree Tales." *Journal of American Folklore*, Vol. 34, pp. 320-321.

## TEMPLE, J. H.

1887. *History of North Brookfield, Massachusetts*, Brookfield.

1889. *History of the Town of Palmer, Massachusetts, Early Known as the Elbow Tract*. Published by the Town of Palmer.

## THOMAS, CYRUS

1894. "Report on the Mound Explorations of the Bureau of American Ethnology." *Bureau of American Ethnology, 12th Annual Report*, Washington.

## THOMPSON, STITH

1922. "The Indian Legend of Hiawatha." *Modern Language Association Publication*, Vol. 37, No. 1, pp. 128-140.

1929. *Tales of the North American Indians*. Cambridge.

## THWAITES, REUBEN GOLD, Editor

1896-1901. *The Jesuit Relations and Allied Documents*. Vol. 1-73. Cleveland.

- TITTERINGTON, PAUL F.
- 1935. "Certain Bluff Mounds of Western Jersey County, Illinois." *American Antiquity*, Vol. 1, pp. 6-47, Menasha.
  - 1938. "The Cahokia Mound Group and Its Village Site Materials." St. Louis.
  - 1940. "Notes and News Section." *American Antiquity*, Vol. 5, pp. 239-240, Menasha.
- TORII, R.
- 1919-21. *Etudes Archaeologiques et ethnographiques Les Ainou des Isles Kouriles*. Journal of the College of Science, Tokyo, Vol. 42.
- TOWNSEND, C. W.
- Bulletin Nuttall Ornithological Club, Vol. 6, p. 60.
- TROWBRIDGE, C. C.
- 1938. *Meeārmeeā Traditions*. Edited by Vernon Kinietz. Occasional Contributions from the Museum of Anthropology, University of Michigan, No. 7.
  - 1939. *Shawnese Traditions—C. C. Trowbridge's Account*. Edited by Vernon Kinietz and Erminie W. Voegelin. Occasional Contributions from the Museum of Anthropology, University of Michigan, No. 9.
- TURNER, LUCIEN M.
- 1894. "Ethnology of the Ungava District, Hudson Bay Territory." *11th Annual Report Bureau of American Ethnology 1889-90*, pp. 159-350, Washington.
- TURNEY-HIGH, H. H.
- 1941. *Ethnography of the Kutenai*. American Anthropological Association, Memoir No. 56.
- TYRRELL, J. B., editor
- 1931. *Documents Relating to the Early History of Hudson Bay*. Champlain Society Publication, Vol. 18, Toronto.
- UHLENBECK, C. C.
- 1911. "Original Blackfoot Texts." *Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam*. Vol. 12, No. 1.
  - 1912. "New Series Blackfoot Texts." *Verhandelingen der Koninklijke Akademie von Wetenschappen te Amsterdam*. Vol. 13, No. 1.
- VAILLANT, GEORGE C.
- 1939. *Indian Arts in North America*. New York.
- VAN DER DONCK, ADRIAEN
- 1656. *A Description of New Netherlands*. 2nd edition, Amsterdam, 1656. Reprinted in the New York Historical Society Collections, New York, 1841, Series 2, I, pp. 125-242.
- VERWYST, CHRYSOSTROM
- 1886. *Missionary Labors of Fathers Marquette, Menard and Alloue in the Lake Superior Region*. Milwaukee and Chicago.
- VETROMILE, REVEREND EUGENE
- 1866. *The Abenakis and Their History*. New York.
- VOEGELIN, C. F.
- 1938. "Peoria-Miami Comparative Notes." Appendix to "Shawnee Stems and the Jacob P. Dunn Miami Dictionary." Part I. *Prehistory Research Series, Indiana Historical Society*, Vol. 1, pp. 103-108.
  - 1939. "The Lenape and Munsee Dialects of Delaware, An Algonquian Language." *Proceedings of the Indiana Academy of Science*, Vol. 49, pp. 34-37.
  - 1941a. "Internal Relationships of Siouan Languages." *American Anthropologist*, Vol. 43, pp. 246-249.

- 1941b. "North American Indian Languages Still Spoken and Their Genetic Relationships." In *Language, Culture, and Personality, Essays in Memory of Edward Sapir*, Menasha.
- 1941c. "Proto-Algonquian Consonant Clusters in Delaware." *Language*, Vol. 17, pp. 143-147.
- VOEGELIN, C. F. and E. W. VOEGELIN  
[1945.] *Map of North American Indian Languages*. Publication No. 20, American Ethnological Society.
- VOEGELIN, ERMINIE W.  
1938. "Some Possible Sixteenth and Seventeenth Century Locations of the Shawnee." *Proceedings of the Indiana Academy of Science*, Vol. 48, pp. 13-18.
1941. "Indians of Indiana." *Proceedings of the Indiana Academy of Science*, Vol. 50, pp. 27-32.
- n.d. Shawnee Field Notes. Manuscript.
- VON BONIN, G. and G. M. MORANT  
1938. "Indian Races in the United States. A Survey of Previously Published Cranial Measurements." *Biometrika*, Vol. 30, pp. 94-129.
- VON MERHART, GERO  
1928. "Sibirien: A. Päläolithikum; B. Neolithikum." *Reallexikon der Vorgeschichte* (Max Ebert, Editor), Vol. 12, pp. 55-70.
- VON RICHTHOFEN, VON B. FRHR.  
1932. "Zur Frage der archäologischen Beziehungen zwischen Nordamerika und Nordasien." *Anthropos*, Bd. 27, pp. 123-151.
- VOTH, H. R.  
1912. "Arapaho Tales." *Journal of American Folklore*, Vol. 25, pp. 43-50.
- WALKER, WINSLOW  
1935. *A Caddo Burial Site at Natchitoches, Louisiana*. Smithsonian Miscellaneous Collections, Vol. 94, No. 14, Washington.
1936. *The Troyville Mounds, Catahoula Parish Louisiana*. Bureau of American Ethnology, Bulletin 113, Washington.
1942. "Excavation of a Middle Mississippi Mound and Village in New Madrid County, Missouri." *Society for American Archaeology Notebook*, Vol. 2, No. 4, pp. 60-61.
- WARREN, W. W.  
1885. *History of the Ojibways*. Minnesota Historical Society Collections, Vol. 5, pp. 21-394.
- WATERMAN, T. T.  
1914. "The Explanatory Element in the Folk Tales of the North American Indian." *Journal of American Folklore*, Vol. 27, pp. 1-54.
- WEBB, CLARENCE H.  
1944. "Stone Vessels from a Northeast Louisiana Site." *American Antiquity*, Vol. 9, pp. 386-395, Menasha.
- WEBB, CLARENCE H. and MONROE DODD, JR.  
1939. "Further Excavation of the Gahagan Mound; Connections with a Florida Culture." *Texas Archeological and Paleontological Society*, Bulletin 11, pp. 92-126.
1941. "Pottery Types from the Belcher Mound Site." *Texas Archeological and Paleontological Society*, Bulletin 13, pp. 88-116.
- WEBB, WM. S.  
1938. *An Archeological Survey of the Norris Basin in Eastern Tennessee*. Bureau of American Ethnology, Bulletin 118, Washington.
1939. *An Archaeological Survey of Wheeler Basin on the Tennessee River in Northern Alabama*. Bureau of American Ethnology, Bulletin 122, Washington.

1940. "The Wright Mounds: Sites 6 and 7, Montgomery County, Kentucky." *University of Kentucky Reports in Anthropology and Archaeology*, Vol. 5, No. 1.
- 1941a. "Mt. Horeb Earthworks, Site 1 and the Drake Mound, Site 11: Fayette County, Kentucky." *University of Kentucky Reports in Anthropology and Archaeology*, Vol. 5, No. 2.
- 1941b. "The Morgan Stone Mound: Site 15, Bath County, Kentucky." *University of Kentucky Reports in Anthropology and Archaeology*, Vol. 5, No. 3, pp. 223-291.
1942. "The C. and O. Mounds at Paintsville." *University of Kentucky Reports in Anthropology*, Vol. 5, No. 4.
- WEBB, WM. S. and DAVID L. DEJARNETTE**
1942. *An Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi and Tennessee*. Bureau of American Ethnology, Bulletin 129, Washington.
- WEBB, WM. S. and WM. G. HAAG**
1939. "The Chiggerville Site, Site No. 1, Ohio County, Kentucky." *University of Kentucky Reports in Anthropology and Archaeology*, Vol. 4, No. 1.
1940. "The Cypress Creek Village, Site 11 and 12, McLean County, Kentucky." *University of Kentucky Reports in Anthropology and Archaeology*, Vol. 4, No. 2.
- WEDEL, WALDO A.**
1940. *Culture Sequence in the Central Great Plains*. Smithsonian Miscellaneous Collections, Vol. 100, pp. 291-352, Washington.
1942. *Archeological Remains in Central Kansas and Their Possible Bearing on the Location of Quivira*. Smithsonian Miscellaneous Collections, Vol. 101, No. 7, Washington.
1943. *Archeological Investigations in Platte and Clay Counties, Missouri*. U. S. National Museum Bulletin 183, Washington.
- WELPLEY, MARGARET N.**
1932. *A Concordance to Cree Mythology*. Thesis, George Washington University.
- WESLAKER, C. A.**
1942. "Ossuaries on the Delmarva Peninsula and Exotic Influences in the Coastal Aspect of the Woodland Pattern." *American Antiquity*, Vol. 8, pp. 142-151, Menasha.
- WEST, GEORGE A.**
1905. "The Aboriginal Pipes of Wisconsin." *The Wisconsin Archeologist*, Vol. 4, Nos. 3 and 4, pp. 41-171.
1929. *Copper: Its Mining and Use by the Aborigines of the Lake Superior Region*. Bulletin of the Public Museum of the City of Milwaukee, Vol. 10, No. 1.
- WEYER, E. M., JR.**
1932. *The Eskimos, Their Environment and Folkways*. New Haven.
- WHITNEY, PETER**
1793. *History of the County of Worcester*. Worcester.
- WILFORD, LLOYD A.**
1941. "A Tentative Classification of the Prehistoric Cultures of Minnesota." *American Antiquity*, Vol. 6, pp. 231-249, Menasha.
- WILLEY, GORDON R.**
1939. "Ceramic Stratigraphy in a Georgia Village Site." *American Antiquity*, Vol. 5, pp. 140-147, Menasha.
1945. "The Weeden Island Culture: A Preliminary Definition." *American Antiquity*, Vol. 10, pp. 225-255, Menasha.
- WILLEY, GORDON R. and RICHARD B. WOODBURY**
1942. "A Chronological Outline for the Northwest Florida Coast." *American Antiquity*, Vol. 7, pp. 232-255, Menasha.

## WILLIS, ROGER K.

1941. "The Baumer Focus." *Society for American Archaeology Notebook*, Vol. 2, No. 2, p. 28.  
Mimeographed.

## WILLOUGHBY, CHARLES C.

1898. *Prehistoric Burial Places in Maine*. Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. 1, No. 6, Cambridge.
1901. "Antler-pointed Arrows of the Southeastern Indians." *American Anthropologist*, n.s. Vol. 3, pp. 431-437.
1915. "The 'Red Paint People' of Maine." *American Anthropologist*, Vol. 17, No. 2, pp. 406-409.
1916. "The Art of the Great Earthwork Builders of Ohio." In *Holmes Anniversary Volume*, pp. 469-480, Washington.
1935. *Antiquities of the New England Indians*. Peabody Museum of Archaeology and Ethnology, Cambridge.

## WILLOUGHBY, CHARLES C., and EARNEST A. HOOTON

1922. *The Turner Group of Earthworks, Hamilton County, Ohio*. Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. 8, No. 3, Cambridge.

## WILLOUGHBY, R. R.

1935. "Magic and Cognate Phenomena: An Hypothesis." In *Handbook of Social Psychology*, C. Murchison, editor, Worcester.

## WILSON, R. N.

1893. "Blackfoot Star Myths." *American Antiquarian*, Vol. 15, pp. 149-150; 200-203.

1898. "The Blackfoot Legend of Scar-Face." *Report, British Association for the Advancement of Science*, Vol. 67, pp. 788-789.

## WIMBERLY, STEVE B. and HARRY A. TOURTELLOT

1941. *The McQuorquodale Mound. A Manifestation of the Hopewellian Phase in South Alabama*. Geological Survey of Alabama, Museum Paper No. 10, University.

## WINCHELL, N. H.

1911. *The Aborigines of Minnesota*. Minnesota Historical Society, St. Paul.

## WINSHIP, GEORGE PARKER, Editor

1905. *Sailors Narratives of Voyages along the New England Coast, 1524-1624*. Boston.

## WINSLOW, EDWARD

1621. "A Letter Sent from New England to a Friend in These Parts." In Young, Alexander, 1841, pp. 230-238.

1624. "Good News From New England." In Young, Alexander, 1841, pp. 269-375.

## WINTEMBERG, W. J.

1906. "Bone and Horn Harpoon Heads of the Ontario Indians." *Annual Archaeological Report for 1905*, Toronto.

1924. "Unusual Stone Artifacts from Ontario." *Annual Archaeological Report for 1923*, Toronto.

- 1928a. "Artifacts from Ancient Graves and Mounds in Ontario." *Transactions of the Royal Society of Canada, 3rd series*, Vol. 22, pp. 175-202, Ottawa.

- 1928b. *Uren Prehistoric Village Site, Oxford County, Ontario*. Bulletin of the National Museum of Canada No. 51, Anthropological Series No. 10.

1931. *Distinguishing Characteristics of Algonkian and Iroquoian Cultures*. Bulletin of the National Museum of Canada No. 67, Annual Report for 1929.

1935. "Archaeological Evidence of Algonkian Influence on Iroquoian Culture." *Proceedings and Transactions of the Royal Society of Canada*, Vol. 29, Section 2, pp. 231-242.

1936. *Roebuck Prehistoric Village Site, Greenville County, Ontario*. Bulletin of the National Museum of Canada No. 83, Anthropological Series, No. 19.
- 1939-40. "Eskimo Sites of the Dorset Culture in Newfoundland." *American Antiquity*, Vol. 5, pp. 83-102, 309-333, Menasha.
- Wisconsin Historical Society  
1855-1908. *Collections*. Vols. 1-18. Madison.
- WISSLER, CLARK  
1914. "Material Cultures of the North American Indians." *American Anthropologist*, Vol. 16, pp. 447-505.
1916. *Harpoons and Darts in the Stefánsson Collection*. American Museum of Natural History, Anthropological Papers, Vol. 14, Pt. 2, New York.
1922. *The American Indian*. 2nd edition. New York.
1936. *Population Changes among the Northern Plains Indians*. Yale University Publications in Anthropology No. 1, New Haven.
1938. *The American Indian*. 3rd edition. New York.
1940. *The Indians of the United States*. New York.
- WISSLER, CLARK and D. S. DUVAL  
1908. *Mythology of the Blackfoot Indians*. American Museum of Natural History Anthropological Papers, Vol. 2, New York.
- WOLF, MORRIS  
1919. *Iroquois Religion and Its Relation to Their Morals*. New York.
- WOOD, WILLIAM  
1634. *New England's Prospect; a True, Lively, and Experimental Description of that Part of America, Commonly called New England*. London. Republished by Eben Moody Boynton of West Newbury in 1898.
- WOODBURY, GEORGE and EDNA  
1935. *Prehistoric Skeletal Remains from the Texas Coast*. Medallion Papers, No. 18, Globe, Arizona.
- Woodland Conference  
1943. "The First Archaeological Conference on the Woodland Pattern." *American Antiquity*, Vol. 8, pp. 393-400, Menasha.
- WRIGHT, J. C.  
1917. *The Crooked Tree*. Michigan.
- WYMAN, JEFFRIES  
1868. "On the Fresh-water Shell Heaps of the St. Johns River, East Florida." *The American Naturalist*, Vol. 2, pp. 393-403, 449-463.
- YONEMURA, K.  
1933. *Ueber Keramick, gefunden bei der Stadt Afashiri, Hokkaidô*. Zeitschrift für Prähistorie, Bd. 4, Heft. 3-4. [In Japanese]
- YOUNG, ALEXANDER  
1841. *Chronicles of the Pilgrim Fathers of the Colony of Plymouth from 1602 to 1625*. Boston.
- YOUNG, EGERTON R.  
1892. *Stories from Indian Wigwams and Northern Camp-Fires*. New York.
- ZEISBERGER, DAVID  
1910. "History of the Northern American Indians, etc." *Ohio Archaeological and Historical Society Quarterly*, Vol. 19, Nos. 1 and 2.
- ZOLOTAREV, A.  
1938. "The Ancient Culture of North Asia." *American Anthropologist*, Vol. 40, pp. 13-23.









WELLS BIN  
WALTHAM,  
AUG. 19

PHILLIPS ACADEMY



3 1867 00210 7881

